FIXED POINT FIRE DETECTION

THE LOOKOUTS

United States Department of Agriculture, Forest Service

Region 5

(California)

By: Mark V. Thornton

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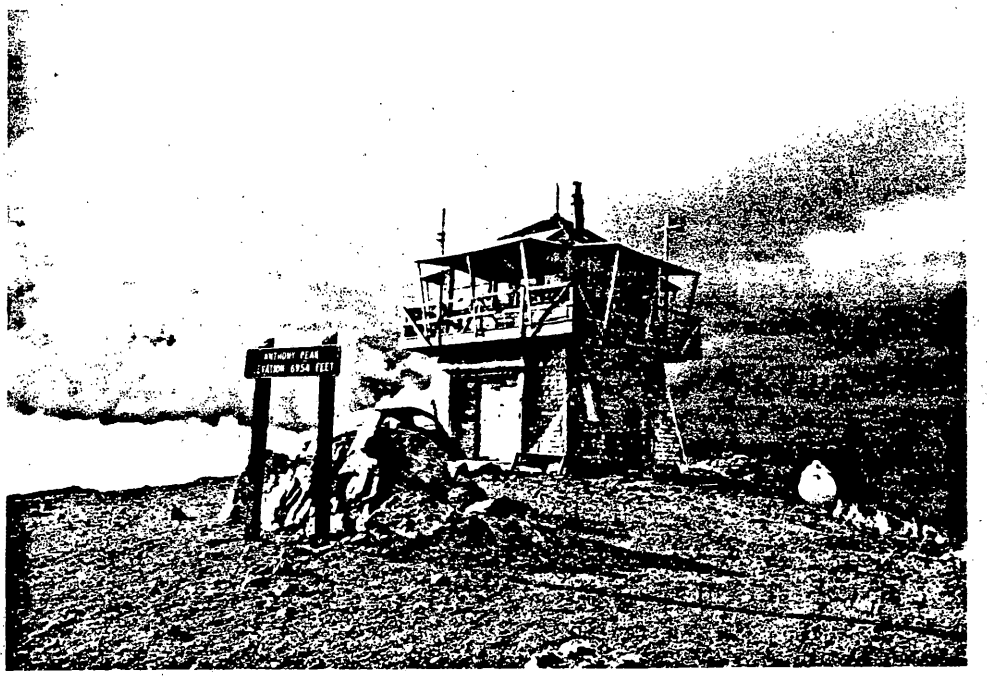

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The Lookout

'Way above the forests, that are in my care,
Watching for the curling smoke - looking everywhere,
Tied onto the world below by a telephone,
High, - and sometimes lonesome - living here alone.
Snow peaks on the skyline, woods and rocky ground,
The green of Alpine meadows circle me around,
Waves of mountain ranges like billows of the sea -
Seems like in the whole wide world there's not a soul but me.
Peering thru the drift smoke, sighting thru the haze,
Blinking at the lightning on the stormy days,
Here to guard the forests from the Red Wolf's tongue
I stay until they take me down, when the fall snows come.

*-- Robin Adair.**

*California District News Letter; U.S.D.A., Vol. VIII, No. 14. April 8, 1927. pg. 1.

Prologue

This report presents information on the first phase of an ongoing research project on the history of fire lookouts in California.[1] The purpose of this report is to establish a foundation upon which a management plan for the inventory and evaluation of lookout structures can be developed, pursuant to the National Historic Preservation Act of 1966, as amended. The brief review of fire detection history contained herein is designed to facilitate a general discussion on thematic classification and evaluation of lookout facilities. A more comprehensive report on forest-fire lookout history will be presented at a later date.

This report is divided into four main sections. Part one recounts the historical evolution of fire lookouts. Part two describes the classification system for delineating structure types. Part three details a proposed historic significance evaluation methodology. Part four is a statistical abstract of information gathered over the past three years concerning currently standing structures. Finally, a glossary and master inventory (among other items) has been included.

The research has confined itself to the history of lookouts in California. The inspiration for this framework lies in the existence of the major fire detection studies of the early 1930s as conducted by the California Forest and Range Experiment Station (later Pacific Southwest Forest and Range Experiment Station).

Those studies treated the 17 National Forests of California as one nearly contiguous National Forest unit thus establishing detection points that often provided inter-Forest coverage. The wisdom of such a plan quickly brought positive responses from the National Park Service, California Division of Forestry, and the Los Angeles County Forestry Department, all of whom requested inclusion very early on. The net result was a highly integrated network of lookouts covering nearly all of California's forest and range lands, incidentally including most of California's farming areas as well. The author's continuing goal is to document and preserve what led up to and became of that master detection plan.[2]

PART ONE

Historical Development

"The mere fact that a tract is carefully watched makes it safer, because campers, hunters, and others crossing it are less careless on that account. By an [sic] efficient supervision most of the unnecessary fires can be prevented, such as those arising from carelessness in clearing land, leaving camp fires, and smoking; from improperly equipped sawmills, locomotives, donkey engines, etc.

*One of the fundamental principles in fire protection is to detect and attack fires in their incipiency. In an unwatched forest a fire may burn for a long time and gain great headway before being discovered. In a forest under proper protection there is some one man or corps of men responsible for detecting fires and for attacking them before they have time to do much damage or to develop beyond control."**

*"Protection of Forests From Fire" by Henry S. Graves, Forester. U.S.D.A. Bulletin 82. 1910.

INTRODUCTION

For those unfamilar with wildland fire protection in California, a brief outline is in order. In general, wildland fire protection involves those areas which contain highly inflamable material such as grass, brush, deciduous and evergreen trees. Areas outside of federally owned land are protected by the California Department of Forestry (CDF). The notable exceptions are the counties of Kern, Los Angeles, Marin, Orange, Santa Barbara, and Ventura which have (or had) developed their own fire departments. Other counties not directly protected by CDF either are highly urbanized or have very low exposure to wildland fire, or both.[1]

Wildland fire protection of federal lands is divided between the Department of the Interior-- which includes the National Park Service, Bureau of Land Management, and Bureau of Indian Affairs; and the Department of Agriculture-- which includes the National Forest Service. The Forest Service is by far the largest single provider of wildland fire protection. Because wildfire is no respector of agency boundaries, mutual aid agreements, whereby one agency lends assistance to fight fire within another agency's area of responsibility, have been agreed to for a number of years.

Despite this complex hierarchy, wildland fire control, whether on the federal, state, or local level, is comprised of the same five elements: fuels management, presuppression, prevention, detection, and suppression. Fuels management involves vegetation modification. Presuppression entails fire emergency planning. Prevention deals with public education and fire regulation enforcement. Detection is the discovering and locating of fires. Suppression is the actual fighting of an on going fire.[2]

Fire detection can be divided into two major categories: patrol and fixed point. Patrols are conducted by ground and aerial units. Fixed point detection is by automation systems or by operating forest-fire lookouts. It is the lookouts which are the focus of this history.

Historical Development

*"The lookout man's dwelling, office, and workroom should be centered in one house, on one floor, and in one room. The room can not be less than 12 feet square, and must be so constructed that at any moment of the day, with a turn of the head, he can see his whole field. He must be fixed so that while he is cooking, eating, reading, writing, dressing, washing his clothes, walking about, or sitting down, he can not help but be in the best position to see."**

*"Systematic Fire Protection in the California Forests" by C. duBois. U.S.D.A. 1914.

Historical Development

In its broadest sense, fire detection refers to any effort, no matter how informal, to spot fires before they can cause unwanted damage. To simplify things, fire detection can be divided into two major areas: detection to protect property and improvements, and detection to protect natural resource and wilderness areas. The former has been practiced for hundreds of years, if not since the beginning of man's first unsavory experiences with uncontrolled fire.[1]

This early form of detection might be as casual as staying alert while tending to the fields to as formal as posting sentries on city or fort walls.[2] In essence the chief goal was to prevent loss of life and property. For many towns and cities, the threat of fire was more likely an internal problem than the result of a wildland fire bearing down from outside. In practice, though, individuals were rarely enlisted to solely look out for fires.

On the other hand, detection to protect remote resource and wilderness areas posed an entirely different situation. Before any genuine efforts were undertaken, four basic premises had to be accepted. First, man had to overcome the pessimistic attitude that wildfire was unavoidable and uncontrollable. Second, man had to hold a collective desire to be responsible for all fires regardless of location. Third, man had to view wildland fire as desirable to regulate, regardless of cause.[3] Finally, man had to have the means to control such fire.

There must, of course, be powerful motivation before populaces will take action along such lines. As to why the United States became the proving ground for wildland fire control in general, and the development of resource fire detection in particular hinges first and foremost on the existence of a fire regime throughout the North American continent.[4] This environmental reality when coupled with the relatively rapid, and large scale American settlement of vast wilderness areas set the stage for impending disaster.

After the secession and eventual defeat of the South, in the Civil War, the industrial Northeast was left free to direct national policies favorable to its economy. Legislation in the form of protective tariffs and the subsidizing of a transcontinental railroad system spurred westward growth.[5] Improving telegraph systems served to carry back news of the frontier's promise which, in turn, further encouraged this rapid westward expansion.

Historical Development

California, via the Gold Rush, had already experienced a tremendous influx of fortune hunters which had signaled the beginning of fullscale settlement with its attendant changes to the landscape; the postwar westward push served to accelerate this process. While restrictions on the indiscriminate use of fire were enacted, fire detection, if any, was strictly confined to the protection of cultivated lands, structures, and towns. The practice of light-burning and range-clearing fires, by Indians and ranchers alike, continued to be a major cause of widespread destruction. Ranchers, in particular, freely burned their land in an effort to expand and improve pasturage. The general attitude prevailed that wildland fire protection was unneccessary, impossible to undertake, and counterproductive; the few volunteer fire brigades organized were solely aimed at protecting towns, homes, etc.[6]

Within California and throughout the Nation, major abuses by loggers and settlers with fire and with forest cover use led to conflagration fires causing monumental damage and tragic loss of life.[7] The news of these recurring events spurred growing fears of an imminent timber famine. The widely touted belief that the destruction of the forest cover would cause a sustained drought resulting in the permanent conversion of timber land to desert, added momentum to a growing national effort to combat these abuses.[8] The fact that America had reached the other ocean further raised the spectacle of a finite and shrinking forest. Geologists (in particular[9]), nature lovers, and the newly emerging forestry profession, would lead the fight for an organized call to accountability in what would later be termed the "Conservation Movement."[10]

The goal of this movement was the enaction of federal legislation that would insure the protection of the Nation's supplies of timber and water, the conservation of soil, the maintenance of navigable waterways, and the protection of wildlife. Heated debate centered over the thorny issue of permanently withdrawing Government land from future private ownership. But arguments also broke out about how such land was to be utilized and which governmental agency should regulate that use.[11]

Back-tracking somewhat, it should be kept in mind that all territory acquired by the United States was placed under the custodianship of the General Land Office (GLO). In 1849 the GLO had been transferred (along with the Bureau of Indian Affairs) to the newly created Department of the Interior.

Historical Development

The GLO's chief function was to establish some order to the process of transfering the public domain into private ownership.

The Northeastern backed Homestead Act of 1862[12], was the single greatest inducement for westward expansionism. However, this nearly wholesale give-away program eventually came under severe fire from the increasingly powerful conservationists lobby.[13] In 1873 Congress began a series of modifications to restrict this act. Congress also began slowly withdrawing, that is, the setting aside of the public domain from permanent settlement, especially scenic tracts of land.[14]

Even in the midst of the Civil War President Lincoln had signed legislation approving the Yosemite Grant which marked the beginnings of a national park program.[15] Two years latter the State of California accepted the land and appointed Gaylen Clark as the first park superintendant. His cabin in the Mariposa Grove was not far from Wawona Point which provided a scenic vista and subsequently saw use as a fire detection point.[16] The Yosemite Grant illustrated the growing sentiment of a number of Americans that natural resource areas of high aesthetic value should be placed under the collective guardianship of a responsible public agency thereby insuring that all people would have equal access to enjoy such lands in their natural state, both now and in the future.

The creation of Yellowstone National Park, in 1872, and the subsequent enlistment of the United States Army Cavalry to patrol and otherwise protect this area, marked the first federally backed effort at wildland fire control. The Army's successful record in Yellowstone undoubtedly strengthened the call for more Federal lands to be set aside in this manner.[17] In 1890, the Sequoia and General Grant Parks, and the Yosemite Forest Preservation were created and the Army program implemented.

The park lands were answering the need to "preserve" scenic areas from settlement but many concerned citizens were advocating that all of the Nation's forests needed to be protected from uncontrolled waste but not necessarily preserved from use, i.e. harvesting. Those cognizant of the problem felt that private individuals and logging companies never would or could manage the Nation's forests wisely; therefore, these lands should be reserved from private ownership and carefully managed by the government to

guarantee a perpetual timber supply.[18] Many conflicts over which lands should be preserved and which reserved would be waged for years to come, not to mention the continued heated debates over homesteading.

The private sector's record of waste, indifference, and avarice certainly gave weight to the contention that only government action would stop the complete destruction of the remaining timber stands. By the 1890s enough political support had been garnered that protection of forested lands had finally reached fruition in the passage of the Forest Reserve Act of 1891. This Act specifically authorized the President to withdraw from homesteading any forest land he deemed of national importance.[19]

The Act did not, however, clearly define what constituted "forest" land. Consequently, the people of Southern California were freed to interpret this legislation as applicable to the inclusion of valuable brush covered watersheds for erosion protection which resulted in the successful creation of the San Gabriel Forest Reserve in 1892. The Sundry Civil Appropriations Act (Organic Act) of 1897 clarified the intent of the Forest Reserve Act and specifically endorsed the validity of watershed protection.[20]

Apart from federal action, the latter half of the 19th century had seen only a few widely scattered efforts at wildland fire protection. The Southern Pacific Railroad Company established a fire lookout in 1876 on Red Mountain (in what is now the Tahoe National Forest) in order to protect their valuable snow sheds in the fire prone Sierra Nevada mountains. While qualifying as California's first forest-fire lookout, its main goal was to protect a private interest not a nationally held trust. The railroad also enlisted fire patrolmen and established a fire train to respond and extinguish any fires that might ignite along their right of way.[21]

By the mid 1880s four states had appointed Boards of Forestry to inquire into the continuing and growing menace of wildland fire. The greatest effort expended was in the State of New York where a fire warden system was implemented to demonstrate the feasibility of intensive fire control within the newly created Adirondack (State) Forest Reserve.[22]

California's board, established in 1885, was fully aware of the dire need for wildland fire protection but a lack of funding, political in-fighting among the state's legislators,

the popularity of light-burning and range clearing, and the difficulties that tainted the Yosemite Grant hampered their endeavors. The Board was abolished in 1893 but the issue was far from dead.[23]

Step-by-step, small advancements were being made. The Army Cavalry patrols significantly lowered the number and size of forest fires. More to-the-point, the Army's simple program demonstrated that recreationists, loggers, and ranchers would accept forest regulations, when such rules produced positive results. Indeed, the logging industry was experiencing similar success with their own fire patrols and self imposed restrictions; a few companies had even started posting lookouts.[24] By 1900, Californians were growing accustomed to the idea that forest-fires could be prevented and controlled.[25] But, even while this realization began taking root; major disagreements over who should manage federal forest land continued unabated.

The Department of Agriculture had been established in 1862 but it wasn't until 1875 that Congress appropriated $2,000 to employ a federal forestry agent to investigate the problems of timber management. In 1881, a Division of Forestry was created within the Department of Agriculture and by 1889 the Department was finally upgraded to Cabinet status. By virtue of being the sole government authority on forest research, it was only logical that these foresters would push for direct control of the land upon which forest trees grew.[26]

Bernhard Fernow, Division of Forestry Chief from 1886 to 1898, sustained this drive, even going so far as to draft an organizational scheme quite similar to today's Forest Service. He advocated that "rangers" were to be in charge of the smallest administrative units within the forest reserves and that only intensive management could accomplish true forest protection.[27] Fernow's opposition numbered among the logging industry, homesteaders, and others resistant to government interference. Then too, the Department of the Interior refused any effort to transfer territory over to the Agriculture Department.[28]

Until 1905, all federal lands, regardless of designation, remained under the control of the Department of the Interior-- specifically the General Land Office. In 1901 the GLO established the Division-R, (Forestry Division) within its own structure. The Division-R men were instructed to go out and survey the various reserved lands and while so

engaged take appropriate action on any fires spotted. During those long treks it is certain that specific mountain tops became favorite stops thus marking the beginnings of the first forest-fire detection system.[29]

Simple though it was, this embryonic start led directly to a permanent federal fire patrol and lookout plan. Those closely involved with the problem of wildland fire protection realized the need for prompt detection of fires in order to have any chance of containing them to a small area burned. It was clear that fire detection must reach out into the wilds, locating fires as rapidly as possible, to insure complete and successful protection. The goal was clear, the means still uncertain.

Gifford Pinchot, Chief Forester 1898 to 1910, is the man generally credited with bringing about the creation of today's Forest Service. Undoubtedly his close friendship with President Theodore Roosevelt played a key role in the latter's executive order, of early 1905, which transferred the Forest Reserves from the Interior Department to the Department of Agriculture. In all probability Pinchot could have gained control of the National park lands as well, if he had been so inclined.[30] Within a few weeks the Agricultural Department's old Bureau of Forestry was reorganized into the United States Forest Service. Many of the GLO's Division-R men also were transfered to the new agency. The renaming of the Forest Reserves to National Forests occured in 1907.

With the arrival of the Forest Service came the first truly concerted efforts to intensively manage the Nation's timbered lands. Pinchot's philosophy of total exclusion of all fires (except for slash disposal) necessitated the creation of an effective prevention, detection, and suppression organization. The construction of California's first two permanent Forest Service lookout stations took place in 1908.[31] But with limited appropriations, Pinchot's management schemes would take many years to fully unfurl.

To handle the emerging fire control organization, California District (later Region 5) Forester Coert duBois worked out a fire plan using the Stanislaus National Forest as a model. The plan was circulated throughout all of California's National Forests during 1911. An element of the plan was the designation of key mountain tops as permanent lookout points.[32] Forerunners to duBois' plan had already introduced the concept of "primary" lookout stations by 1909.[33] Another significant element was the codification of

the recording of fire satistics.

In 1914, duBois presented a more exhaustive and refined treatise on the general subject of fire control. Entitled "Systematic Fire Protection In The California Forests", this report laid a solid foundation for fire control in California and served as a model for the rest of the Nation.[34] In the section devoted to fire detection, duBois presented a standardized plan for a 12' X 12' wood live-in cab. He also endorsed the Aermotor Company's steel observation towers, when topographically required.[35] Three years later he presented "Plan Number 4-A, PRIMARY LOOKOUT BUILDING Standard for District 5." This plan (for a 14' X 14' wood live-in cab) replaced the 12' X 12' cab as the Regional standard and design variations are still in use.[36]

While the Forest Service pursued its management goals, the Department of Interior took steps to insure the retension of its remaining lands. In 1916, the National Park Service was established. Besides taking over the existing parks, the Park Service launched a long and determined program of enlarging old and creating new parks, almost always at the expense of the Forest Service. The tremendous political fallout over the land transfer of 1905 had served to strain relations between the two Cabinet level Departments producing ample expression in the many conflicts which arose between the Forest Service and the Park Service. The Park Service appeared to take issue with anything the Forest Service had to offer. A major contention revolved around the Park Service's reticence to develop a fire control organization due to their rejection of the total fire exclusion policy of the Forest Service.[37]

In California, lands outside of federal control were receiving little fire protection. From 1893 until 1903, the State had taken little action regarding the problem of wildfire. A few loosely organized groups and at least one logging company had started working in this direction when, in 1905, California appointed its first State Forester and created a new Board of Forestry.[38] Ironically, in 1906 California returned the Yosemite Grant to the federal government because of seemingly interminable problems.[39]

In 1911 Congress passed the Weeks Act which provided for matching funds to states that qualified but it wasn't until 1919 that California finally entered the program.[40] In 1922 the State's first two state operated lookouts went into service.[41] The Clarke-McNary Act of 1924 supplanted the

Weeks Law and greatly expanded federal assistance to state forestry programs.[42] In 1927, a general reorganization of State government, by Governor Young, saw the creation of the Department of Natural Resources with a Division of Forestry headed by the State Forester. The 1920s witnessed the true start of a State-run wildland fire protection agency.

Antithetical to the State's slow progress was the advant garde performance of California's National Forest organization.[43] Concurrent with the agressive building of a physical plant for fire protection, the Forest Service was undertaking a number of studies to determine fire behavior in various vegetation types, the effects of light-burning, and the general use of fire in forest management. Mapping of the state's vegetation zones and compilation of fire statistics also continued.[44]

Another project, which commenced during the teens, was the visibility mapping of the seen areas around existing and proposed lookout stations. These maps were to be correlated with fire occurance zone maps to determine the effectiveness of a given detection point. Finally, toward the end of the 1920s, studies were undertaken which determined that the effective outside limit for the detection of smokes was 15 miles; within this radius, fires must be discovered within 15 minutes of their incipiency, to guarantee a reasonable chance of confining them to a small area.[45]

Many of the findings gave credence to a growing dissatisfaction with the overall lookout system then in service. In addition to fires attaining unacceptable size before lookouts could spot them, many fire control officers saw an inherent weakness in not having intra and inter-agency agreements for cooperative lookout stations. A strong advocate of a statewide detection system was Stuart B. Show, who became California District Forester in 1927.

In 1930, Show formed an investigative group at the California Forest and Range Experiment Station (Pacific Southwest Forest and Range Experiment Station of today) to scrutinize every aspect of fire detection. The group, headed by Edward I. Kotok, left no stone unturned; from structure design and lookout site designation to psychological testing of lookout operators, their findings poured forth.

In 1933, the findings of these studies were put quickly to work. Every federal, state, and local wildland fire control agency became involved. The result was the creation

of an integrated system of fire lookouts stretching from the Oregon border to the Mexican line. Once in place, the network would insure the protection of nearly every square mile of forest and range land.[46]

The Civilian Conservation Corps became the main avenue for the construction of the recommended lookouts. Show, Kotok, and Louis Barrett comprised the spearhead, for what became a state-wide effort to organize, locate, and ultilize conservation work camp enrollees. In fact, when the President made known his relief program plans, the Forest Service was looked upon as the agency to formulate plans for using this new labor pool. The bulk of the work on the detection plan was accomplished by 1938. The resultant improvement in fire lookout efficiency and first reporting clearly demonstrated the value of the 1930 study.[47]

As the threat of another world war loomed larger, the military application of California's lookouts became readily apparent. The passage of the National Defense Act, back in 1920, provided the basis for reorganizing the Army command system. An offshoot of this was the creation of the General Headquarters (GHQ) Air Force in 1935. It was the GHQ which established the Aircraft Warning Service (AWS). Starting in 1937, California lookouts were trained and tested in the art of spotting aircraft. Sometimes referred to as the Aircraft Warning System, this pilot project soon spread along the entire west coast and had expanded throughout the nation by 1941. (Note: "Aircraft Warning System" usually referred to the application of radar equipment, just then coming into use, for air defense rather than to the people so engaged.)[48]

With the attack on Pearl Harbor the AWS went on war status and observers were rushed to their respective stations. The Army had delegated to the Forest Service the responsibility of seeing to it that all lookouts whether federal, state, or local were in readiness. Contingency plans called for the winterizing of existing lookouts and the erection of numerous temporary cabins on other peaks. (The fire detection plan of 1930 allowed for distances up to nearly thirty miles between lookouts but the AWS program called for spotters every twelve miles or less.)[49]

Even at established lookouts, small cabins were built to accommodate the requisite two observers. These men and women were required to provide around-the-clock vigilance. While one slept, the other continuously scanned the skies. Telephone lines were kept in good repair and during the win-

ter supplies were flown in or carried in by snow cat.[50]

While the Aircraft Warning Service did continue for the duration of the War, by 1943 the threat to the mainland had abated to such a degree that many stations were closed.[51] In 1945 the program ceased altogether; however, in 1951 the Governors of California, Oregon, and Washington called for the re-establishment of a "Ground Observer Corps" apparently over concern about the emerging Korean Conflict. This program ended about 1957 but the urgency of the lookout's service never did attain the same heights it had during World War Two.[52]

The CCC and allied relief programs not only benefited the Forest Service but had brought about the single greatest leap forward in establishing a physical plant for the California Division of Forestry (later California Department of Forestry). The State, no longer skirting its responsibility, began hiring seasonal employees to staff the numerous new stations. By 1940 fiftyone new lookouts had been built and State fire stations were finally scattered throughout all the fire prone areas outside of the federal protection lands.[53]

The post-War era saw a continuance of California's population boom. The State's strong economy insured that CDF could continue to provide effective wildland fire protection. The appearance and marked growth of suburbs interfacing with fire prone wildland areas prompted the USFS to undertake an agressive and initially autonomous project to address this escalating fire control problem.[54] However, being intrinsically more of a State-level dilemma, the Forest Service invited CDF in as an equal partner, signaling the end of the Forest Service's preeminence in the field of wildland fire management. CDF's growing independence (and budget) also led to a consistent program of replacing aging lookouts with new in-house designed buildings. From the late 1950s to today many State owned but Forest Service designed buildings have been unceremoniously disposed of.

Returning to the national scene, a fire control organization began taking shape within the National Park Service during the 1930s. An unfortunate incident with the Sequoia National Park (a "let burn" fire blewup and crossed into adjacent Forest Service lands causing much damage) instigated this action. The Park Service recruited a Forest Service employee who transferred to the agency and directed the building of a strong Park fire control program.[55] In

keeping with the Park Service ideal that all improvements should blend in with the natural setting the Forest Service lookout designs were reworked by Park Service architects. Needless to say most Park lookouts proved to be of exemplary aesthetics.[56]

In 1935 President Roosevelt had withdrawn all remaining federal land within the continental United States from homesteading. In 1947 the old General Land Office and Grazing Service were combined to form the Bureau of Land Management (BLM). Inside of a decade the BLM would be firmly on the road to creating one of the largest fire control organizations in the Country. At long last every fire prone region of the State and the Nation was under the protection of some agency. It had been a long, hard road but Americans had finally made a collective response to protect all resource and wilderness areas from indiscriminate fire use and damage. Yet even as these advancements were being made, the decline in the number of fire lookouts in use had begun.

In the early 1940s Southern California Forest Service fire control officers called attention to the fact that the general public had begun to report fires as fast and more often than the surrounding lookouts. The increasing problem of smog in the Los Angeles Basin was effecting Federal, State and local agency lookout performance.[57] Unfortunately, the height of the fire season frequently coincided with the worst periods of smog. Shortly thereafter, L. A. area fire agencies commenced the long, irreversible trend of permanently closing lookouts.

Elsewhere, Forest Service studies on the efficient use of lookouts continued. During the 50s, the design of a 13' X 13' all metal live-in cab with flat roof was introduced as a simple and durable replacement to the venerable 14' X 14' wood cab.[58] The Forest Service (Region 5) also dropped restrictions on the use of steel towers in excess of 30' to support live-in cabs. Plans suggest that these towers could have been erected to a maximum height of 120' but no California tower is known to have exceeded 67'.[59] Prior to this Aermotor towers were erected whenever the geography necessitated posting the lookout operator over 30 feet above the ground.[60] A separate ground dwelling provided for living quarters. As a reminder, live-in cabs were preferable to the Aermotor towers in that it kept the lookout operator in direct sight of the seen area at all times.[61]

In the main though, the Forest Service increasingly

devoted most of its time and money into developing alternate means of detection and better means of suppression. Since 1919 aircraft had been used in California for the spotting and locating of fires; however, the advancements made during World War Two in aviation generated a whole new assortment of technology to be adapted for wildland fire protection.[62] Borate (later retardant) bombers, smoke jumpers, and helitak crews all diminished the need for lookout-firemen, as travel times to remote areas became only a matter of minutes. Improved road networks and better, faster firetrucks decreased the need for remote guard stations as well.

A brief respite in the decline of fire lookouts occured from 1955 until 1960 when the Forest Service undertook the Increased Manning Experiment. Despite a significant decrease in suppression costs and burned acreage, the study failed to convince fire management to deter the further closure of detection facilities.[63] Since then an ever increasing number of lookouts have been closed and many structures demolished. Of California's over 600 sites that once saw service less than 290 still have something tangible left. About a 185 of these sites are still in active use. The following outline summarizes the causes behind this dramatic decline:

1) The number of reports coming in from forest users spotting fires has drastically overshadowed the lookouts' reporting significance. Also, a greater number of people live within and adjacent to forested areas.

2) The effectiveness of air patrols has supplanted fixed point detection in many areas.

3) Better roads and equipment has decreased the need of lookout-fireman and secondary sites.

4) Improving communication technology is reducing the need for (manual) lookout radio relays.

5) Smog has rendered many low elevation sites useless.[64]

6) Inflation in maintenance and operation costs is constraining continuance.

7) Fixed point automation with ALDS, RAWS, satellites, and ground optics is further eroding other areas of service.[65]

8) The fire exclusion management policy has been modified to allow certain areas to burn under prescribed conditions.[66]

9) Increasing liability risk coupled with runaway lawsuit judgements has prompted the demolition of many closed facilities.[67]

The prognosis is for a continued reduction. A number of standing lookouts are closed; others are awaiting replacement or remodeling. Sadly, most are slated for permanent removal.

PART TWO

Lookout Classification

*"At Red Bluff, during the winter 1911-12, 2 lookout houses were made and set up temporaily to see what they looked like. They were made collapsible so they could be packed either by man or pack animal to the high points on the mountain that was chosen for the lookout house station. Light lumber, preferably shiplap for siding, 2 x 4 for studding and frame work. The longest pieces in the whole structure were the rafters, 9 feet. When the house was set up it was 10 x 10 in size. The walls were about 4 feet in height; 8 feet to the eaves. Glass windows filled the balance of space."**

*"Early Day Experiences in the U. S. Forest Service" by Robert Harvey Abbey, Forest Ranger; California District.

Lookout Classification

In determining the historical significance of a given building one fundamental approach is to identify and compare individual types. In a general sense, all fire lookouts represent a distinct thematic group but within this group is a wide array of architectural designs. Before delineating these specific design types, it is useful to segregate the various types into seven broad categories. These categories have been established by defining the structure's intended use. Inasmuch as a lookout operator is hired to do just that, namely: "lookout" for fire, then it is the relationship of the work space to the building as a whole that will determine the structure's function and, therefore, its categorical assignment.

The rangefinder (aka: firefinder), a mechanical device used to pinpoint a fire on a map, is intrinsic to the lookout profession; therefore, it makes for the key element in determining the lookout operator's working location. By correlating this factor to the detection site's original fire plan designation (at the time the lookout was constructed) we can insure further insight into the building's originally intended use. The fire plan designations are:

Primary: Continuous seasonal use by lookout operator.

Secondary: Continuous seasonal use by lookout firemen and/or used during moderate to high fire danger only.[1]

Emergency: Used only during high fire danger by lookout-fireman or prevention officer.

Project: Used for specific season(s) to watch regions of short term, high fire danger such as major land clearing operations, hydroelectric projects, highway building, etc.

While the fire plan designation may generally prove useful a few words of caution are in order. Budget constraints and geography have exerted the greatest influence over structure design.[2] However, climate, labor and material source, management policy, and even public relations have also effected the final architectural selection.[3] Therefore, the most reliable method for categorization will be the location of the rangefinder. The only exception is when dealing with structures used by fire management that were actually constructed for some other purpose; these buildings

Lookout Classification

should be grouped in a separate category. The seven categories are:

1. Observation Only. Rangefinder is located in a work area only; general rule-of-thumb is that room's floor plan is under 144 square feet; cupolas are not to be included. Any fire plan designation. See Plate 1.

2. Live-in Observatory. Most of the lookout operator's activities are centralized in the same room as the rangefinder, e.g. kitchen-bedroom-work area; floor plan is 144 square feet or larger. Generally primary or secondary designation. See Plate 2.

3. Cupola. Definition: "a small structure on top of a roof or building to complete a design or serve as a lookout."[4] Like category 1, cupolas are observation only in function and general size but cupolas are distinguished by the fact that they sit directly on top of the lookout operator's residence. Generally primary or secondary designation. See Plate 3.

4. Secondary. The rangefinder is located in a building with restricted visibility due to the building's inherent design. Facility's location is to provide limited detection in areas blind to primary lookouts. (Note: Buildings designated as secondary lookouts that could just as easily provide 360 degree visibility at primary lookout sites should be placed into one of the above categories.) Secondary, emergency, or project designation. See Plate 4.

5. Dwellings. All lookout housing facilities that cannot accommodate a rangefinder by virtue of intrinsic design restrictions. (Note: many secondary type buildings were used only as a dwelling with an observation tower being erected nearby; however, if the building could have provided secondary service without modification then it should be so listed.) See Plate 5.

6. Portable. Includes all tents, trailers, and any facility that was designed for easy set up and removal. Total population is small; therefore, the rangefinder's location is used to indicate generic types. Any designation. See Plate 6.

7. Unclassified. Some lookouts were stationed on top of structures that were constructed for another purpose. Grain elevators, water towers, and visitor centers are only a few examples of what can be expected. Include all structures whose primary use is other than fire detection. Any designation. See Plate 7.

The above categories are simply intended to group design types together to facilitate general quantification and referencing. The specific design types provide both the means whereby historic significance evaluation may be performed as well as an exact count of isolated structure types. But before listing design types, a review of lookout architectural history is called for.

For the most part, all lookout structures reflect architectural concepts which predate fire detection by many years. For example, cupolas have been built for hundreds of years; George Washington's Mount Vernon home being an illustration-in-point.[5] Likewise, towers have also been foreshadowed; e.g. in the oil and mining industries, in ranching and farming, and in cities and fortifications.[6] As such, it might be suggested that only the live-in observatory (category 2) structures represent "the" intrinsic lookout design type. But it must be conceded that fire lookouts are basically simple structures which have never necessitated major engineering innovations. The many types do reflect when specific designs came into or went out of use; and, to a lesser degree, when certain building materials and minor engineering developments made their way to our mountain tops.

One of the first buildings erected in California was a locally designed cupola style building.[7] A major reason for the limited use of cupolas in California (USFS Region 5) was (and still is) Coert duBois' philosophy that all lookout activities should be centered around the firefinder. A less obvious factor was that the Godwin firefinder, endorsed for Region 5 use in 1914, required an elevated 48" X 54" platform.[8] Although observation only towers were fitted with these firefinders their cabs certainly must have been cramped. Other factors such as climate, cost, and convenience probably conspired against the cupola design. Suffice to say, before Region 5's lookout construction program got under full steam, the live-in observatory was

well on its way to standardization and predominate use.

The first known prototypes of the standard 14' X 14' wood live-in observatory were built in the Lassen National Forest as 10' X 10' X 8' high cabs resting on concrete piers or rock foundations. Their size apparently proved too small for comfort, so a 12' X 12' (more accurately 12'8") cab was soon developed and it is this design that appeared in duBois' 1914 USDA bulletin.[9] Another important point to remember is that the 10' X 10' cab was put together first at the work center then dismantled and transported to the lookout site; thus marking the beginnings of prefabricated or "ready cut" lookouts. Another goal had been accomplished as well, namely, the production of a lookout which could be easily carried by mulepack.[10]

The 14' X 14' duBois design of 1917 refined the 12' X 12' and established the basic floor plan for all live-in cabs built since. Additionally, duBois' plans indicate that the cab could be placed on timber towers but no height specifications were given.[11] The tower design was of a nonbattered type similar to (but less massive than) railroad water tank towers. Since then the live-in observatory has been the preferred design for California due, no doubt, to duBois' insistence that the lookout operator should be kept in direct line-of-sight of the seen area at all times; in effect, maximizing the potential to spot and locate fires - day or night.[12]

Other architectural developments are summarized in the following chronological outline (Note: parenthetical numbers are Regional Office engineering designations.):

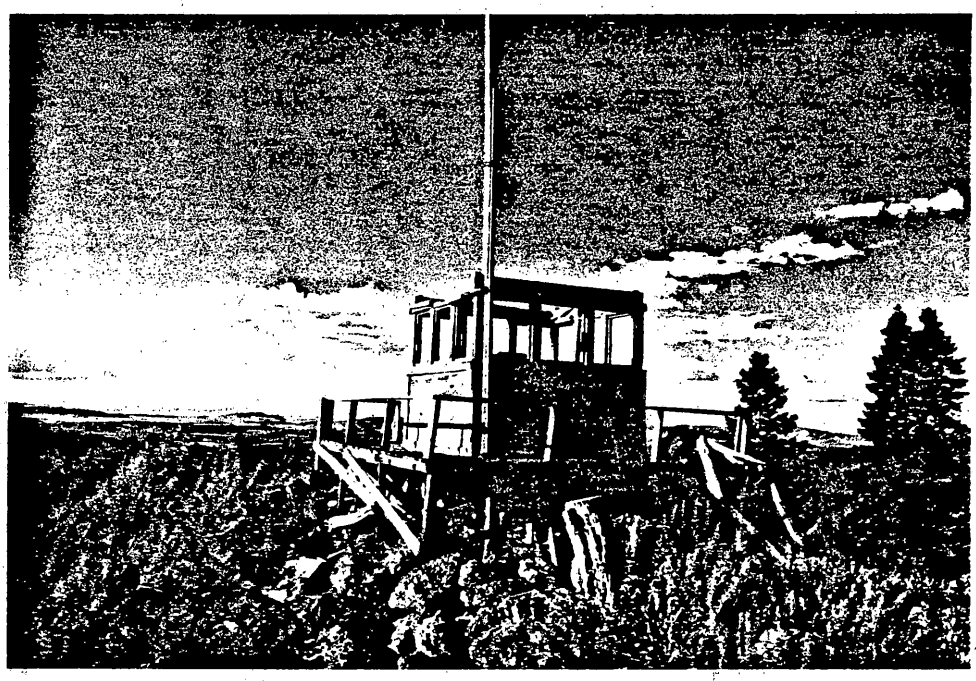
1) High peaks with unobstructed views were the first sites chosen by forest patrols, rangers and forest guards. Tents were occasionally used for shelter and so too were short map board stands. See Plate 8.

2) Trees, crude observation only towers, platforms, and small log cabins began appearing shortly after 1905. See Plate 9.

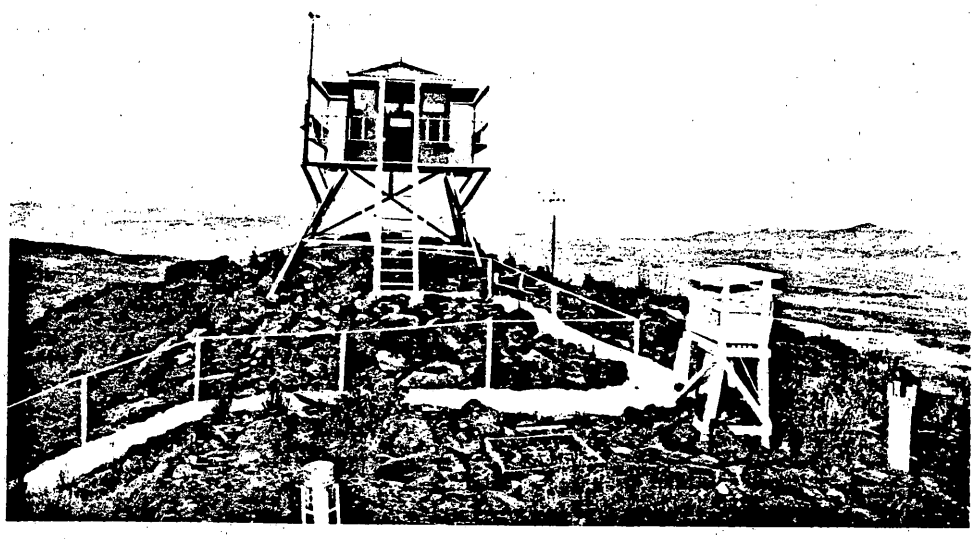
3) By 1911 cabins with cupolas had made their way upon a few mountain tops.[13]

4) Aermotor Company observation only towers with wood or

Observation Only



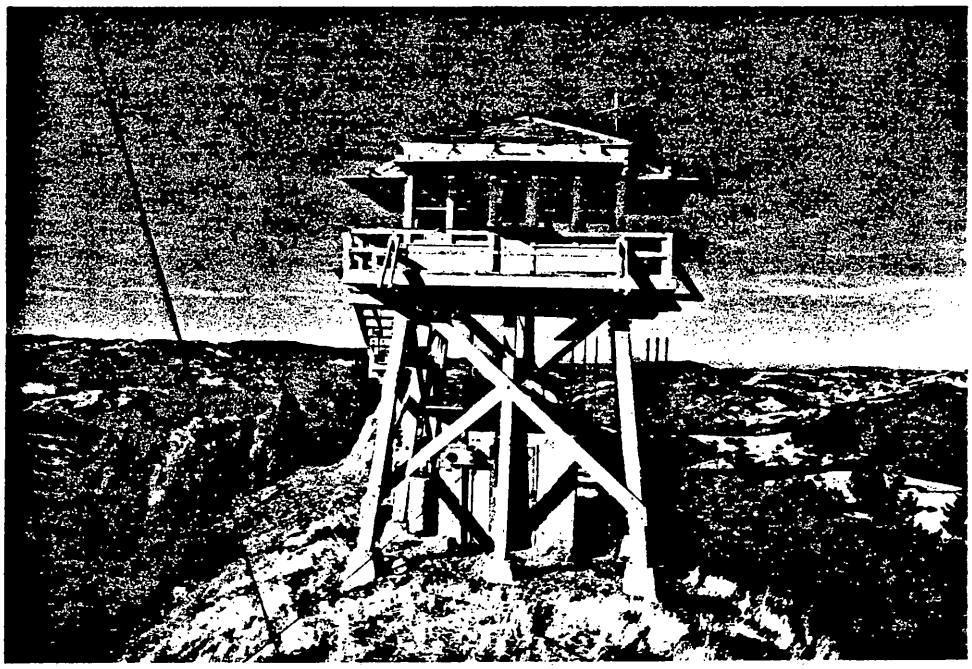
Ruins, 10' X 10' wood cab. Lava Peak, Lassen N. F.



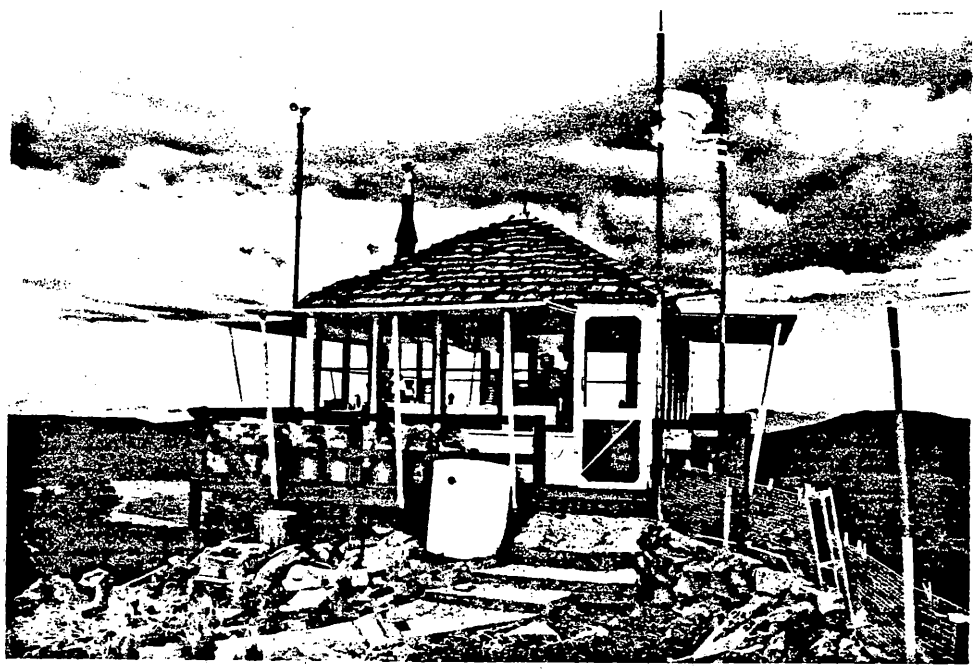
Metal cab on steel tower. Observation Peak, B.L.M.

Plate 1

Live-in Observatory



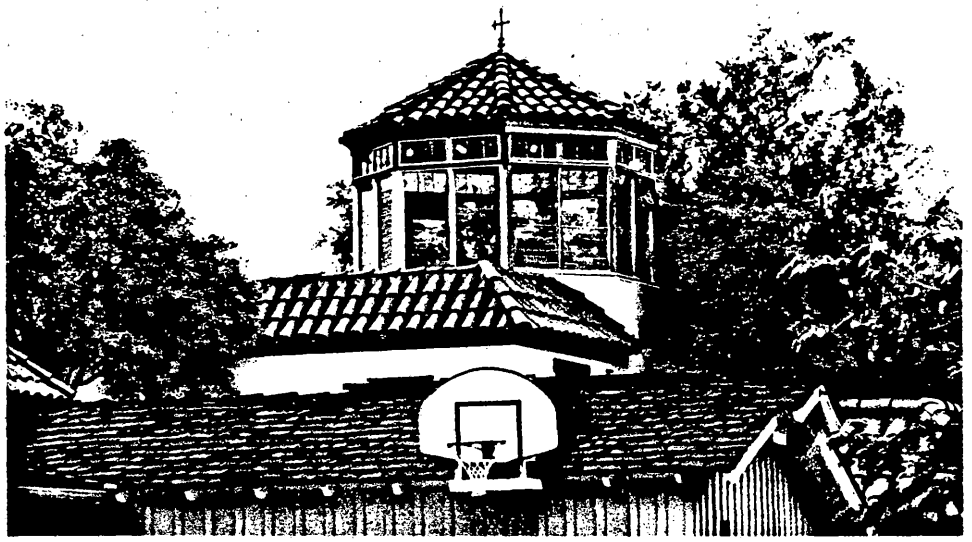
C3 on BOTT. Kettenpom, Six Rivers N. F.



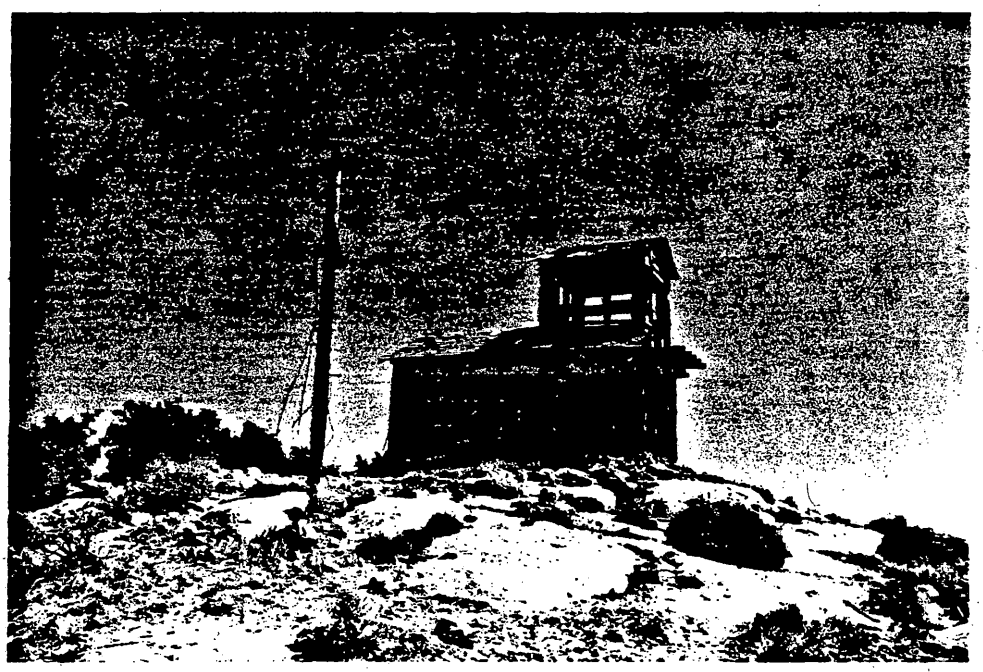
R1, ground cab. Herd Peak, Klamath N. F.

Plate 2

Cupola



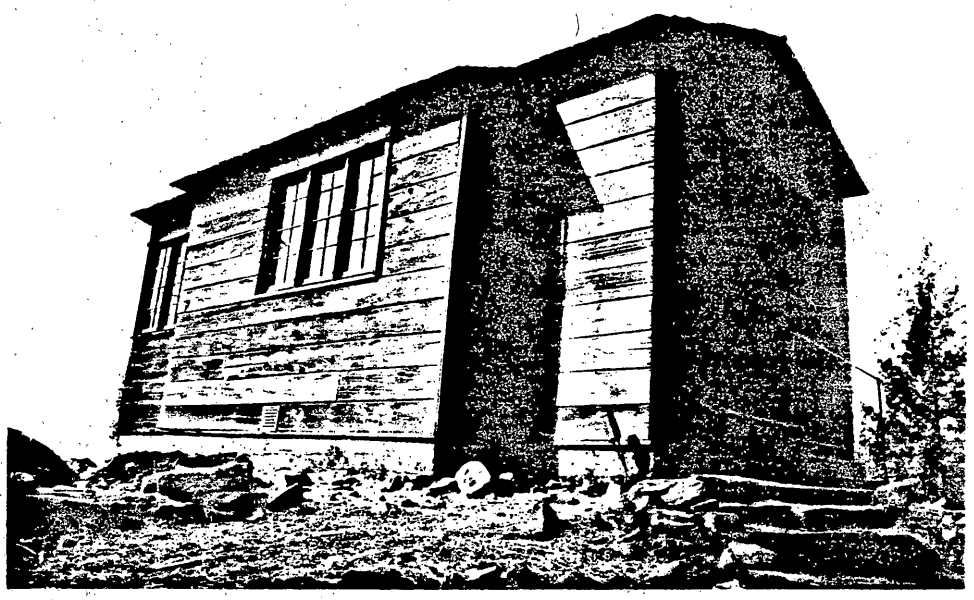
C5. Red Hill, San Bernardino N. F.



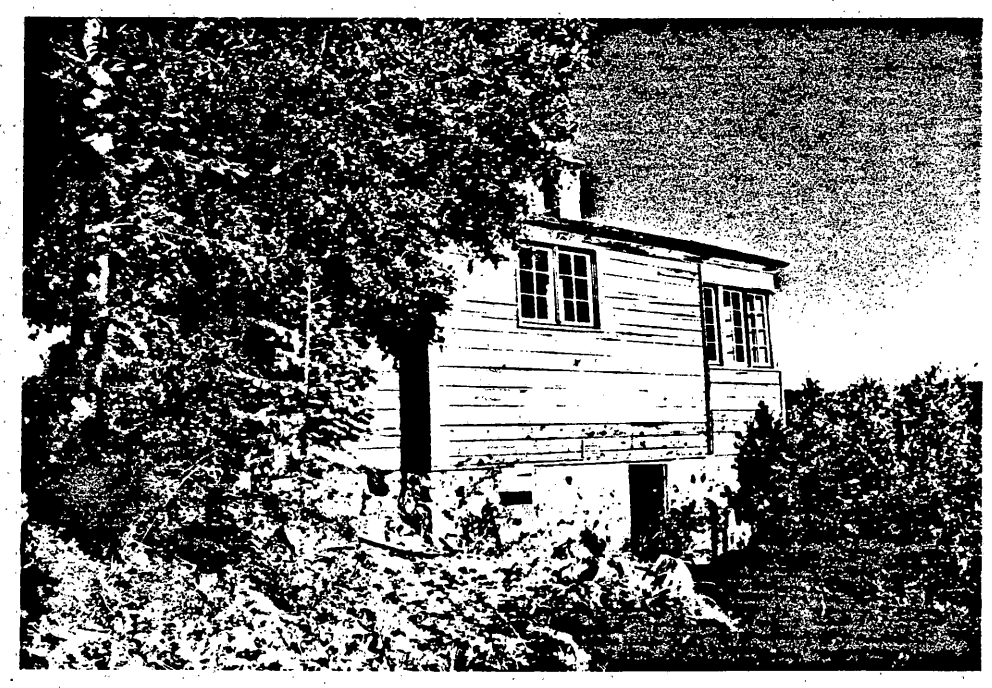
AWS. Caliente Mountain, B.L.M.

Plate 3

Secondary



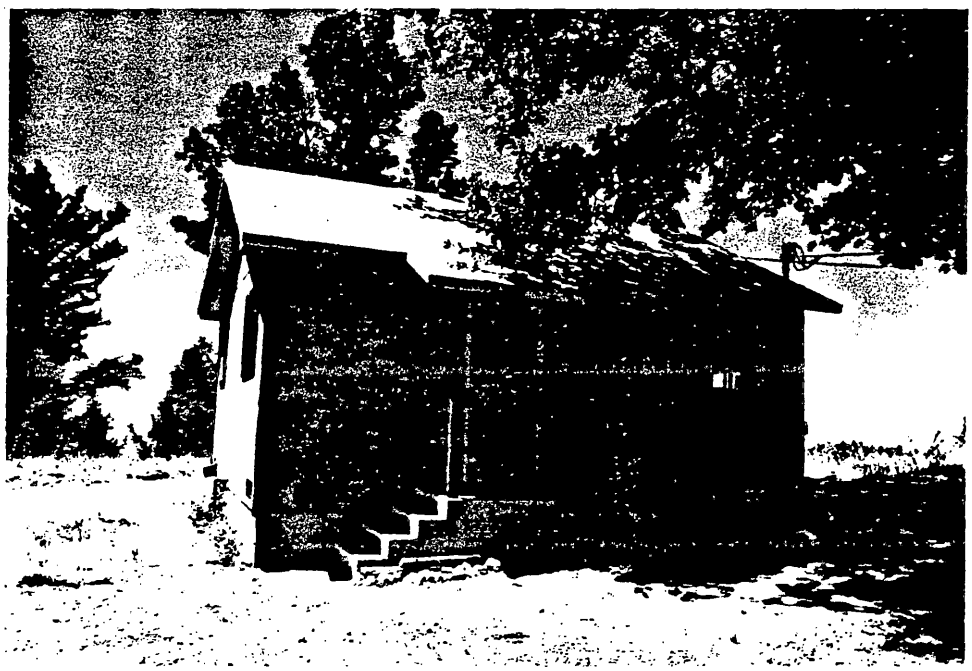
C2. Pine Mountain, Mendocino N. F.



C2. McCarthy Point, Lassen N. F.

Dwellings

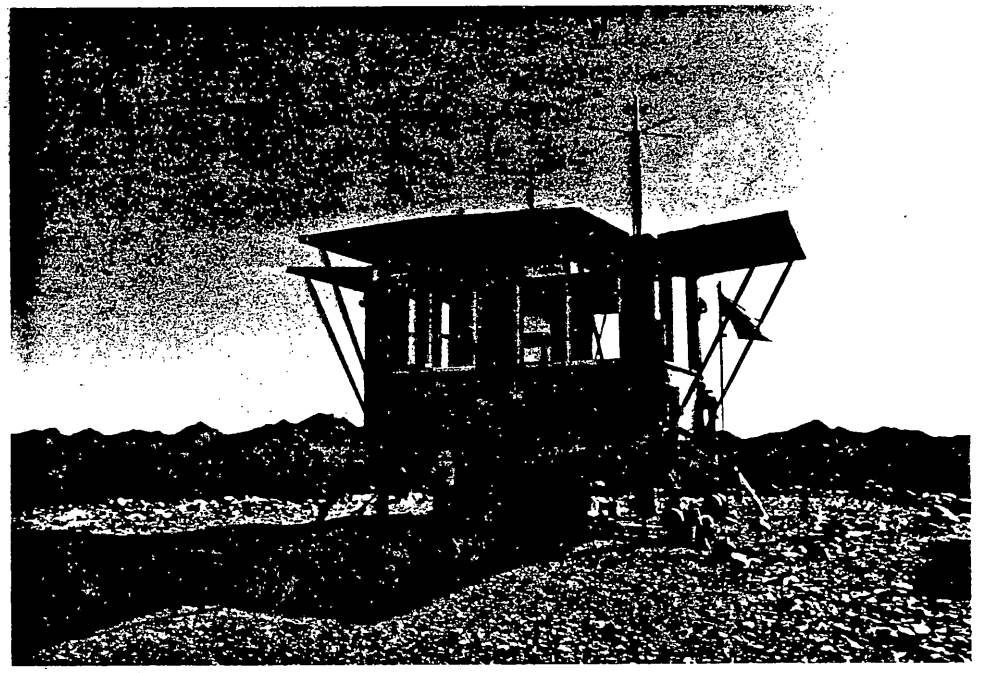
Residence adjacent NOTT. Baker Point, Sequoia N. F.



Residence. Mount Bielawski, Coast Region, C.D.F.

Plate 5

Portable

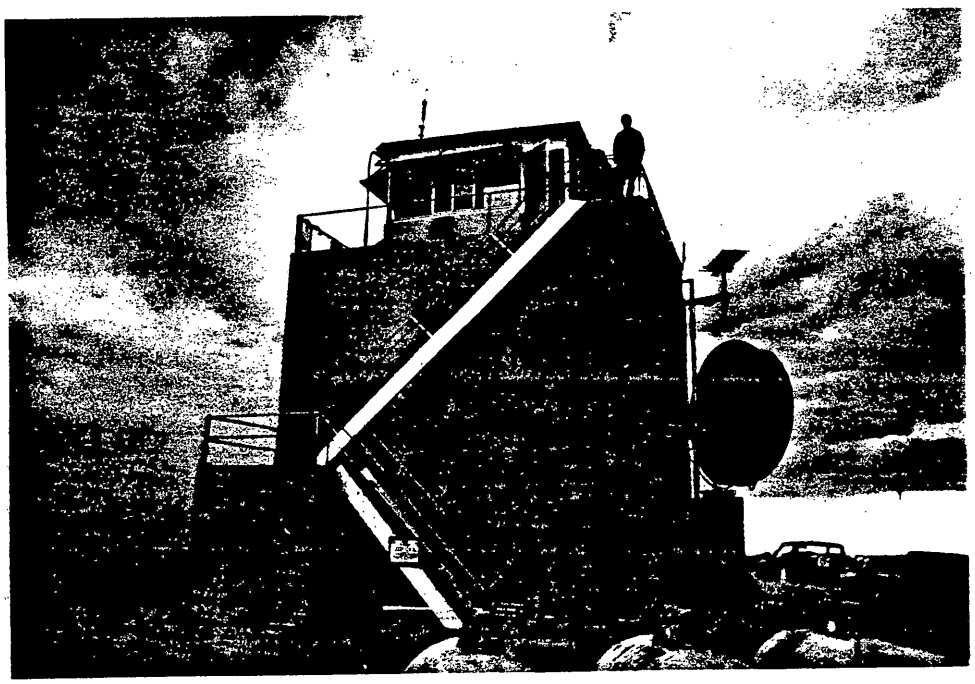


Observation only trailer. Ship Mountain, Six Rivers N. F.

R1M with cupola removed. Ship Mountain, Six Rivers N. F.

Plate 6

Mount Diablo. Calif. Depart. of Parks and Recreation.



C16 on cinder block building. Sanhedrin, Mendocino, N. F.

(more commonly) metal 7' X 7' cabs were first approved for Region 5 use in 1914.[14] See Plate 10.

5) In addition to the 12' 8" X 12' 8" wood live-in cab, Region 5 also approved, in 1914, a wood observation only tower with 7' X 7' wood cab.[15]

6) A 14' X 14' live-in cab was drafted and presented by District Forester, Coert duBois as a Region 5 standard in 1917 (design 4-A). Also presented was a secondary lookout building and fireman's dwelling (designs 4-B & 4-C respectively). The cab could rest on timber towers or on concrete piers.[16] See Plate 11.

7) A "ready cut lookout house" with cupola, was standardized for Region 6 (Oregon and Washington) by 1921 but saw only limited use in northern California.[17] See Plate 12.

8) The duBois 4-A design was revised about 1923 from 23 window panes to 19 (from 6 per side to 5); plus other minor changes.[18]

9) During the 1920s bolts replaced nails as the preferred method of assembling wood timber towers.[19]

10) Also during the 20s nonbattered steel X-brace towers with 8' X 8' metal cabs were being erected in Los Angeles County.[20]

11) About 1927 a prototype "K-brace" steel tower had been introduced to support a 14' X 14' wood cab. This may have been the result of modifying the lower sections of the Aermotor X-brace design.[21] See Plate 13.

12) In 1929 a prototype of the steel "H-brace" tower was erected (design L-201). See Plate 14.

13) The standard 20' H-brace tower was introduced in 1930 (design L-401). See Plate 14.

14) In 1931 the standard steel K-brace tower was introduced (design L-801).[22] See Plate 15.

15) The 4-A cab was revised in the early 30 s by Region 1 and presented to Region 5 in 1931.[23]

Lookout Classification

16) Two lookout-fireman dwellings were designed about 1933. (designs C1 & C1A).[24]

17) The widely used 19' X 30' standard woodframe lookout-fireman dwelling (design BC-201) came out in 1933 (it provided 270 degrees of visibility).[25] See Plate 16.

18) In 1934 Region 5 revised (design BC-301) Region 1's 4-A revision to provide for mullions (metal braces) to reinforce the corner posts from floor to the roof, thus reducing the potential for twisting of cab or loss of the roof during high winds. It was recommended to incorporated this change into older cabs.[26] See Plate 17.

19) In the early 1930 s, battered (design L-601) and nonbattered (design L-101) enclosed timber towers were standardized by Region 5.[27] See Plate 18.

20) Approximately 1937, K-brace towers began using stairways with landings.[28]

21) As late as 1937, Region 5 still did not approve of the construction of towers in excess of 30' for the support of live-in observatories; when conditions necessitated taller structures then observation only towers (Aermotor design up to 120') were required.[29]

22) By 1938 Regions 6 and 4 had standardized plans for steel K-brace towers up to 120' and for timber towers that supported observation only cabs (up to 119') and live-in observatories (up to 117').[30]

23) From approximately 1939 to 1944, 12' X 14' (X 18' high) standard woodframe houses with cupola and 12' X 14' standard woodframe houses each with shingle siding were erected for the Aircraft Warning Service program.[31] See Plate 19.

24) In 1944-5, Region 5 built a steelfame cab with outward sloping windows similar in design to airport control towers (design BC-1001).[32] See Plate 20.

25) In 1947 the California Department of Forestry

introduced an octagonal cab supported by a multi-composition tower consisting of a modified steel K-brace enclosed by a standard woodframe building (CDF design 809R). Cab and tower were integrally designed.[33] See Plate 21.

26) In 1949 Region 5 dropped restrictions on K-brace tower heights.[34]

27) In 1951 Region 5 adopted an all "ferrous sheet metal" (live-in) 13' X 13' cab with flat roof designed by the Washington D.C. office (design CL-104).[35] About this same time Region 5 began constructing cinder block towers.[36] See Plate 22.

28) In 1969, California Department of Forestry engineer, Mike Plesha, introduced a standard woodframe cab with tilted windows as a replacement for the more expensive 809R design.[37] See Plate 23.

29) In 1974 Region 5 architect, Robert Sandusky, designed a hexagonal wood frame cab.[38] See Plate 24.

30) In the early 1980s, the California Department of Forestry began erecting General Services Administration surplus steel atomic test towers.[39] See Plate 25.

A commonly built lookout tower design was the timber tower. Its use began as early as 1914 and the design obviously borrowed heavily from the oil and railroad industries.[40] While distinctions can be drawn between observation only timber towers, supporting cabs typically 7' X 7' wide, versus towers supporting live-in cabs, typically 14' X 14' widths, it should be understood that the bottom sections of observation only towers (exceeding 50') are, in essence, of the same general design as the top sections of towers which support live-in cabs. Likewise, the few steel X-brace towers which supported live-in cabs drew their inspiration from the bottom sections of the familar Aermotor tower (exceeding 50') design.[41] These above observations hold true when discussing battered open (i.e. without siding) or enclosed towers.

One other clarification is the term "timber tower." This term has been traditionally used to describe wood towers whose corner posts consist of 6" X 6" or larger timbers.

Usually these milled lumber posts were 8" X 8" or 10" X 10" and from 10 to 20 feet in total length. They would be creosote treated and then painted after assembly. When dealing with towers fabricated from trees cut on site or with logs brought in, it was most common to refer to these as "round timber towers."[42] Standard 2" X 4" woodframe towers with 4" X 4" corner posts are designated in this report as a "standard woodframe" design.[43]

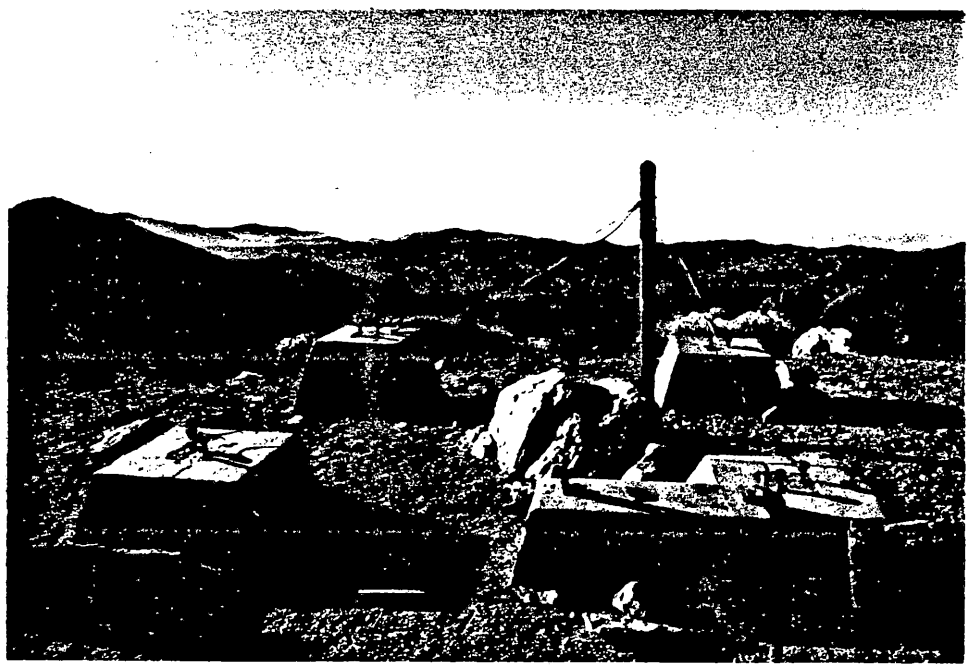
Another important fact is that many lookout designs were standardized in the early 1930s. Credit for this goes directly to the USFS, Region 5 work team, headed by Show, Kotok, and Barrett. As head of the Pacific Southwest Forest and Range Experiment Station, Kotok had taken direct charge of the 1930 fire detection study.[44] Though these men were mainly concerned with improving fire detection, their grandiose plans seemed to anticipate that some large, inexpensive labor force would soon be available. The study's timeliness undoubtedly even surprised its authors.[45]

The State of California dramatically foreshadowed the means when, in 1931, they established work camps under the newly formed State Employment Relief Administration.[46] Of course, the major event was the federally created Civilian Conservation Corps and allied relief programs. Region 5 Forester, Show, played an active part in developing the plans for this joint Army-Forest conservation work camp program. Indeed, Region 5 was one of the most prepared to take advantage of President Roosevelt's programs and upwards of 250 lookout towers and houses sprouted across the State between 1932 and 1942.[47]

The 1930 study's findings were the grounds upon which the Forest Service (Region 5) determined detection site selection and architectural design use. Region 5 provided its services to wildland fire control agencies throughout most of California. By standardizing plans and preselecting sites, the Forest Service could order and ship (in quantity) all necessary materials. Furthermore, the architectural plans were drawn as simply as possible to insure that unskilled labor would have minimal difficulty during construction. The Forest Service monitored all lookout related relief program work. Materials, labor camps and detection site designations were to be coordinated through Show, Kotok and company.[48]

Lookout Chronology

Mapboard stand. Piute Peak, Sequoia N. F.



Concrete Piers. Mount Islip, Angeles N. F.

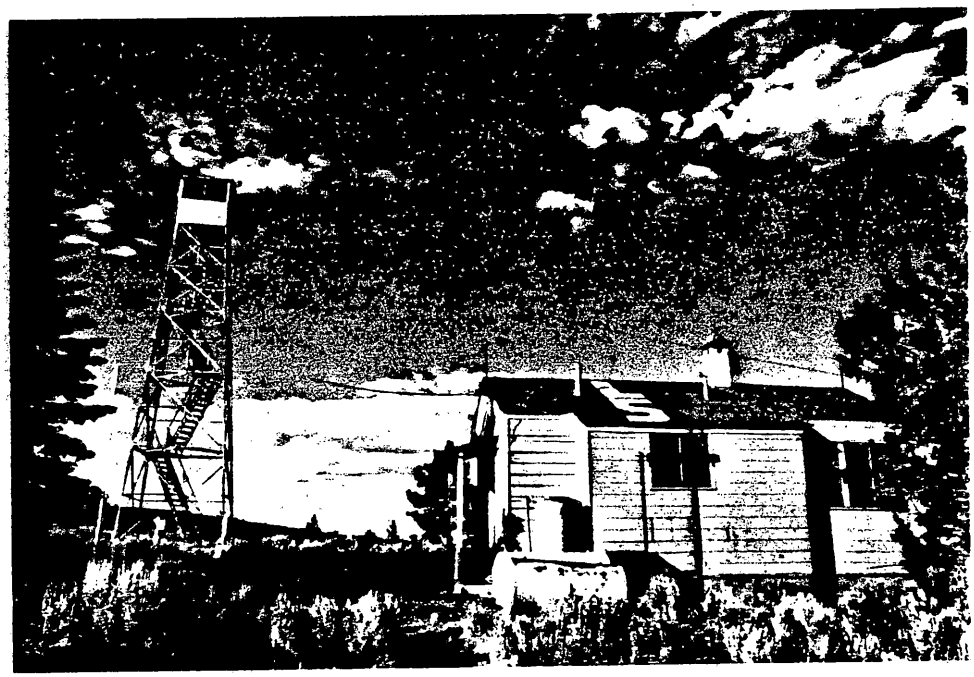
Plate 8

Lookout Chronology

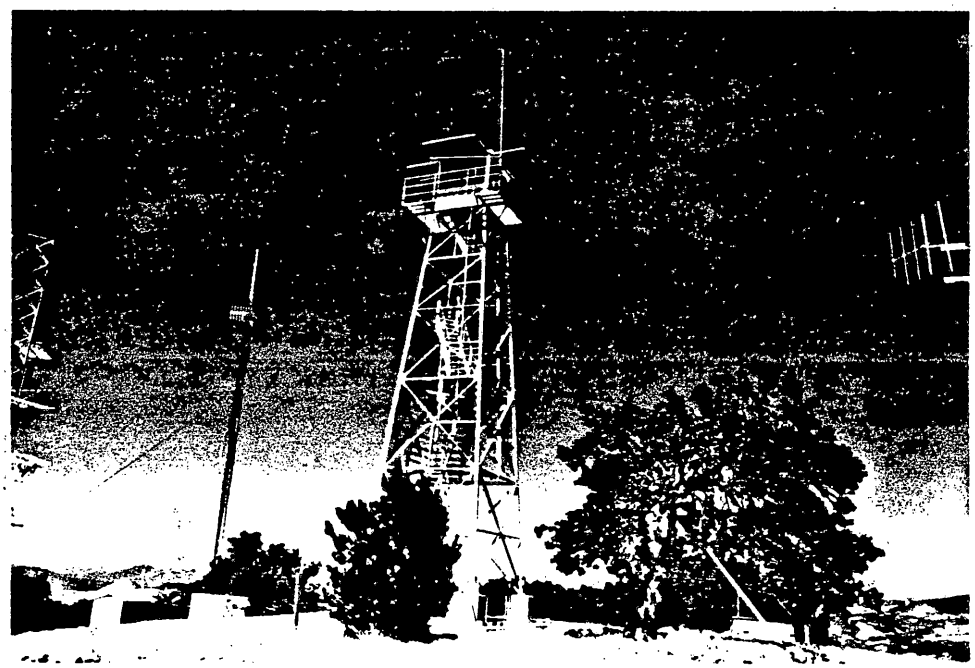
Tree with platform. East Peak (Blue Mtn), Modoc N. F.

Log cabin. Old Slate Mountain, Sequoia N. F.

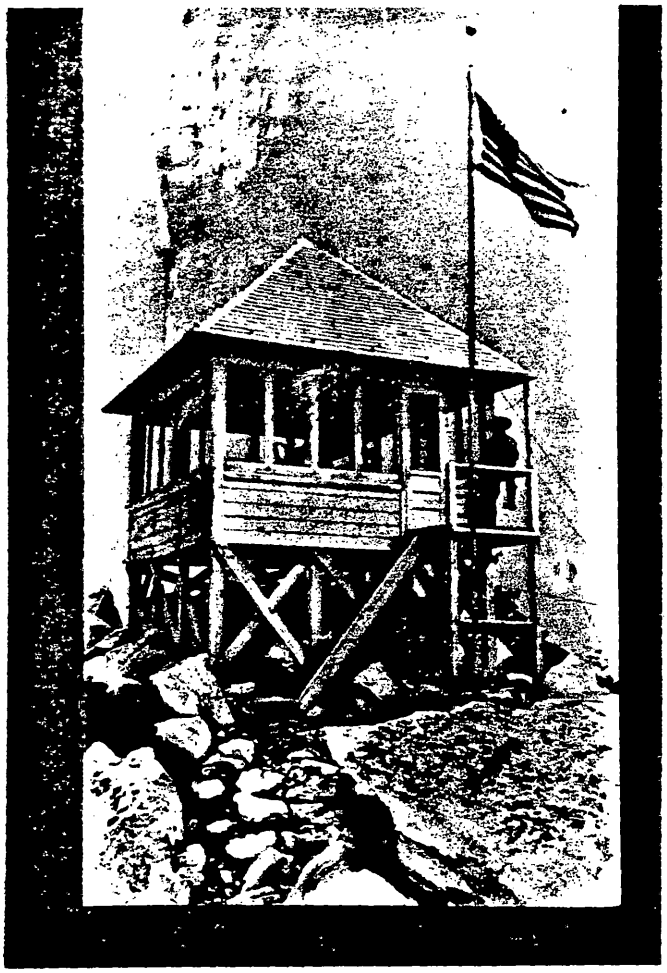
Plate 9



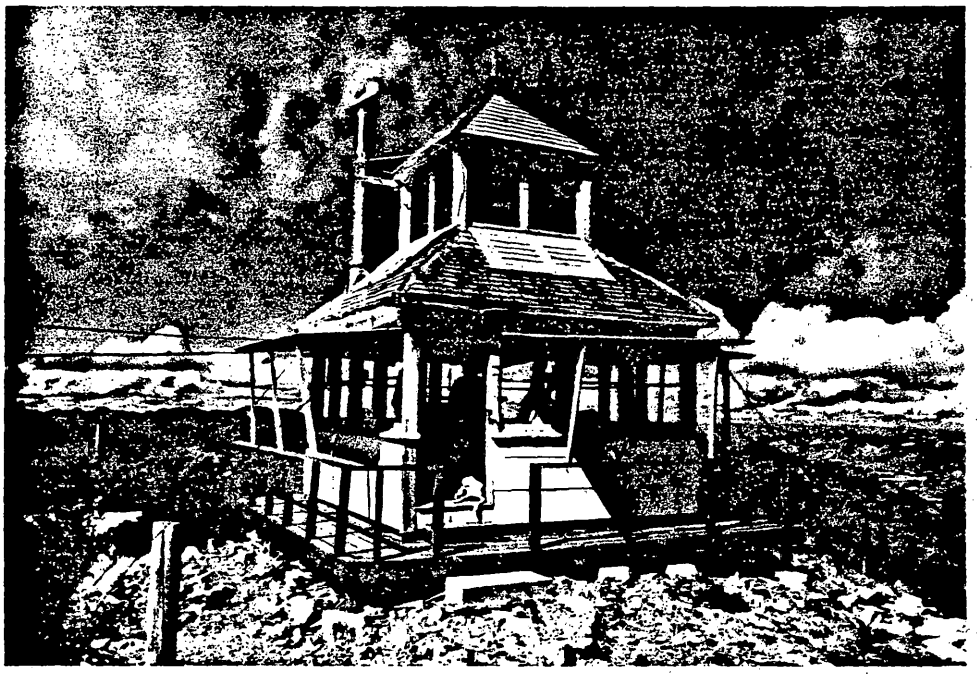
45' tower with C2 (right). Blacks Ridge, Lassen N. F.



49' tower with catwalk. Pratt, Coast Region, C.D.F.



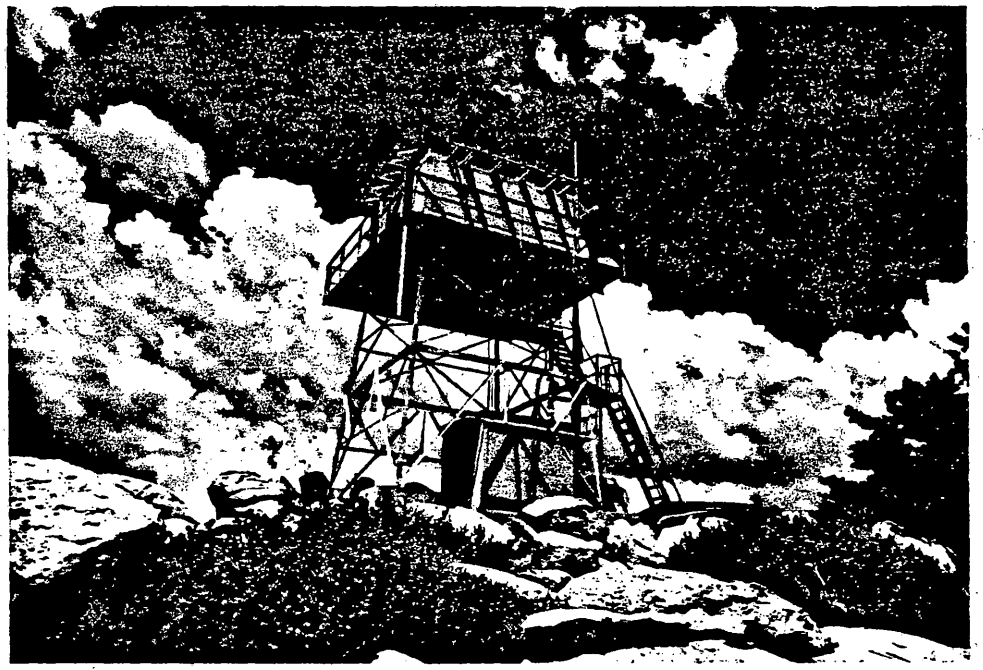
4A on short tower (USFS photo). Tahquitz Peak, San Bernardino N. F.



ALN, Region 6. Dutchman's Peak, Rogue River N. F.

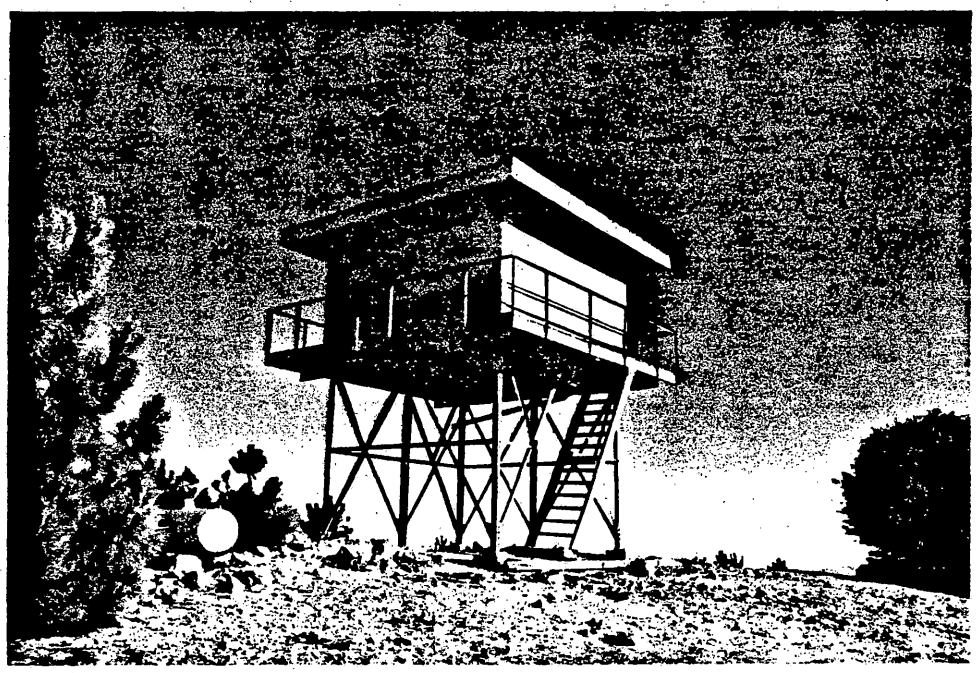
ALN, Region 6. Dutchman's Peak, Rogue River N. F.

Lookout Chronology

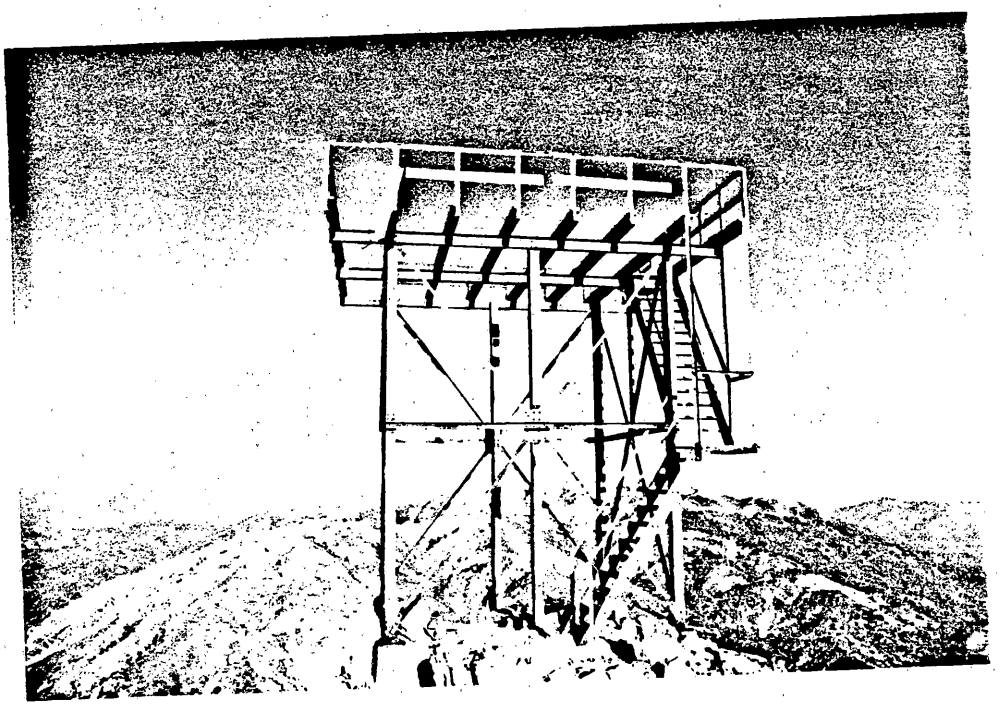


R1 on K,X-B. Keller Peak, San Bernardino N. F.

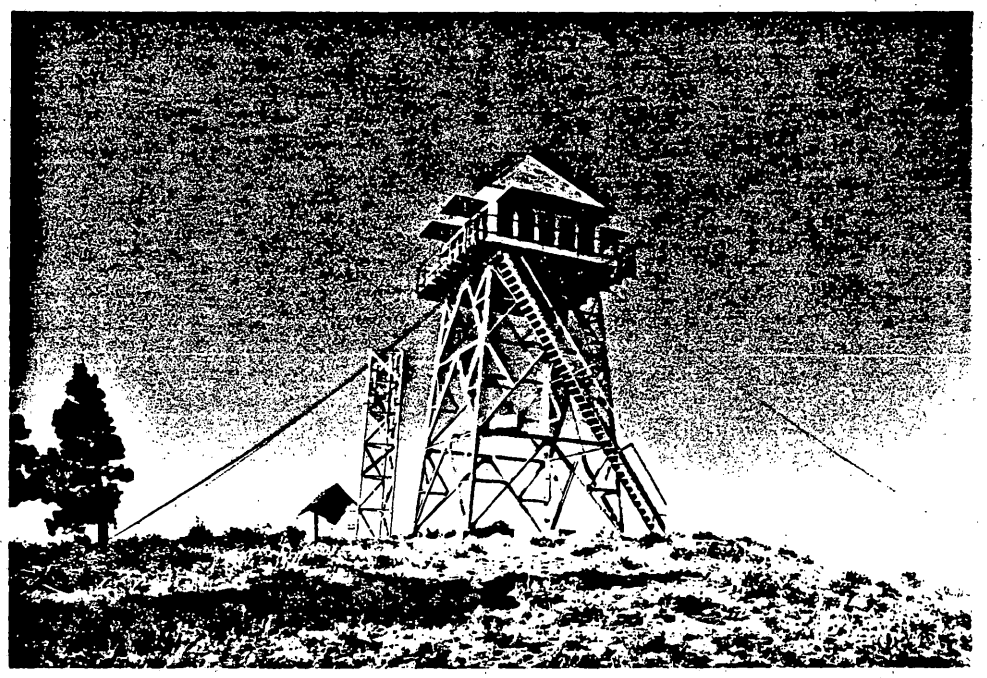
C16 on K,X-B. Blue Mountain, Modoc N. F.



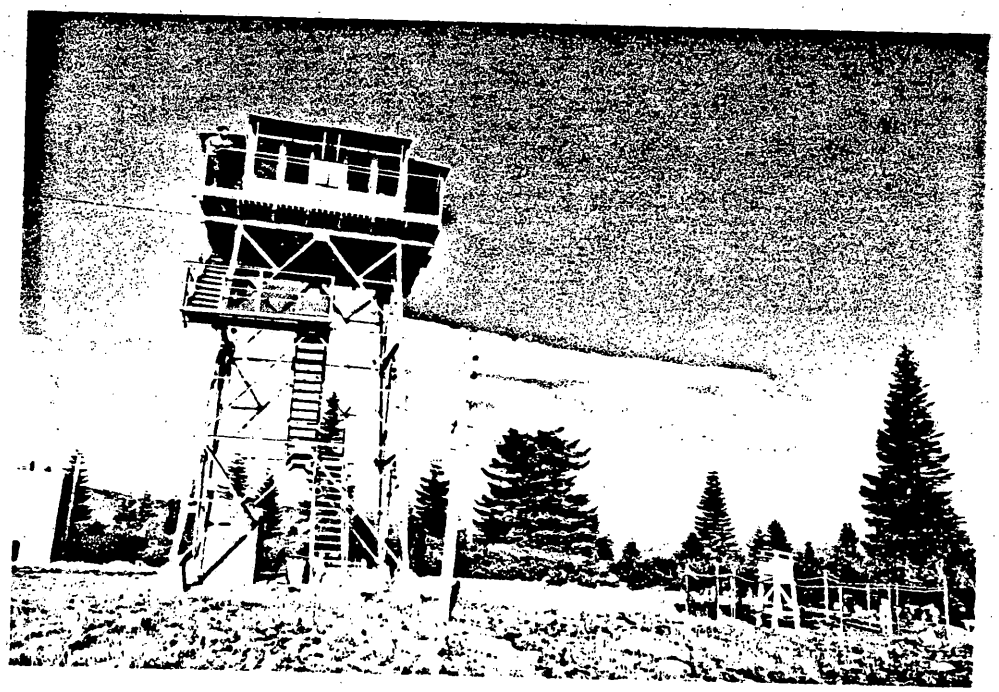
L-2 with C14R. Chews Ridge, Los Padres N. F.



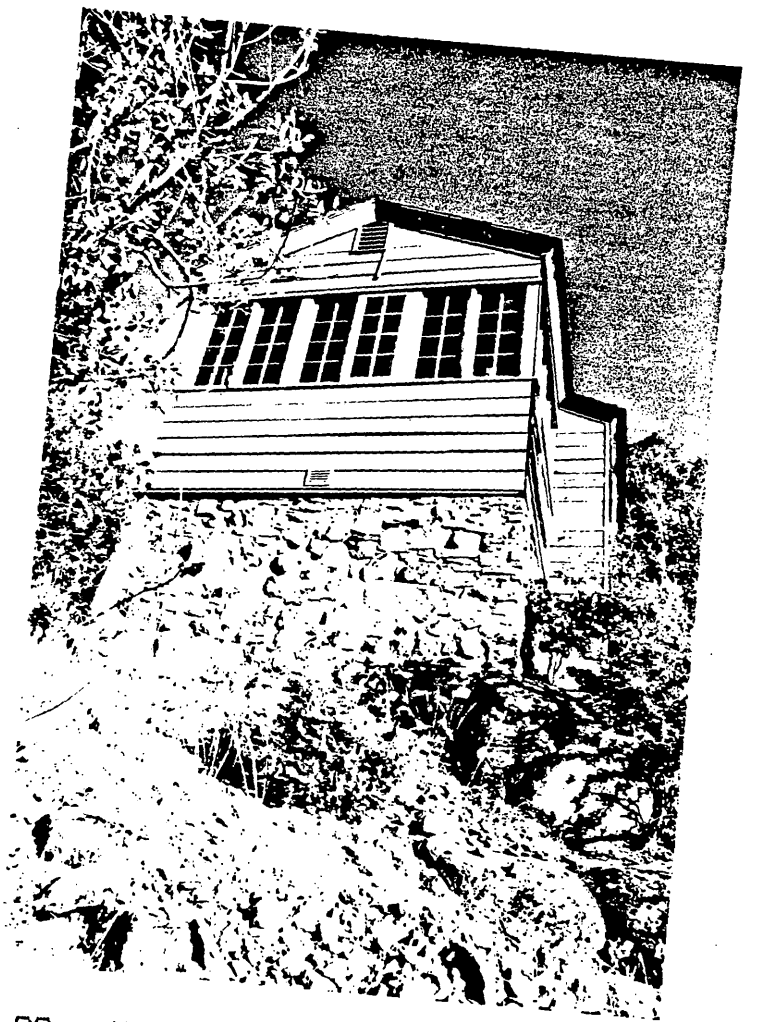
"Decabitated" L-4, 20' H-B. Billy's Pk., Shasta-Trinity N.F.



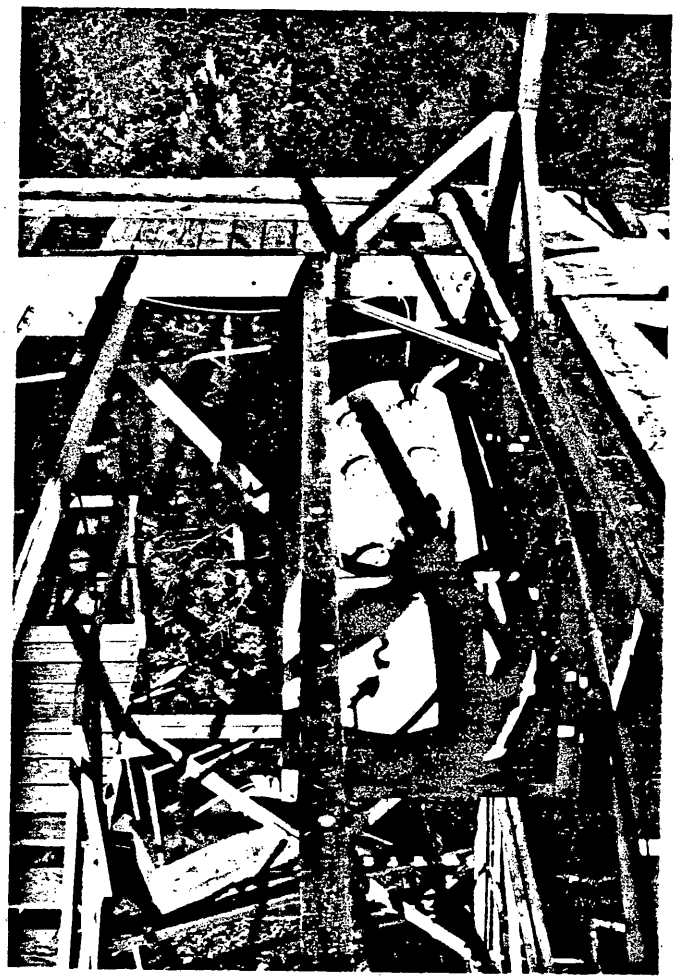
30' K-B, old style stairs. Sugar Hill, Modoc N. F.



30' K-B, stairs with landings. Colby Mountain, Lassen N. F.

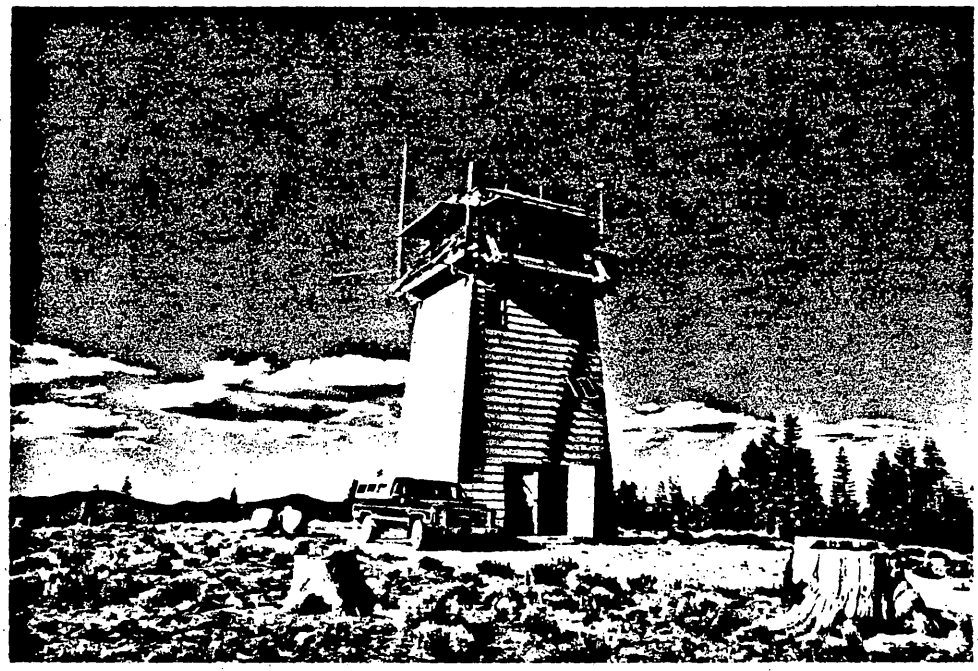


C2. McCarthy Point, Lassen N. F.



Mullions (upper right corner). Helester Point, Tahoe N. F.

Lookout Chronology

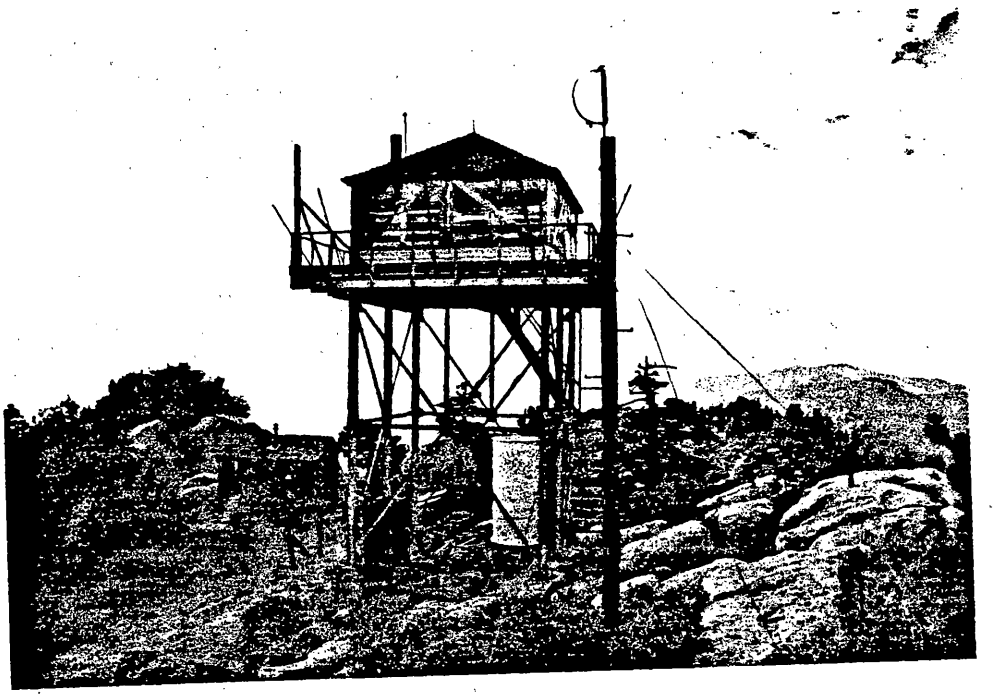


30' BETT. Black Fox Mtn., Shasta-Trinity N. F.

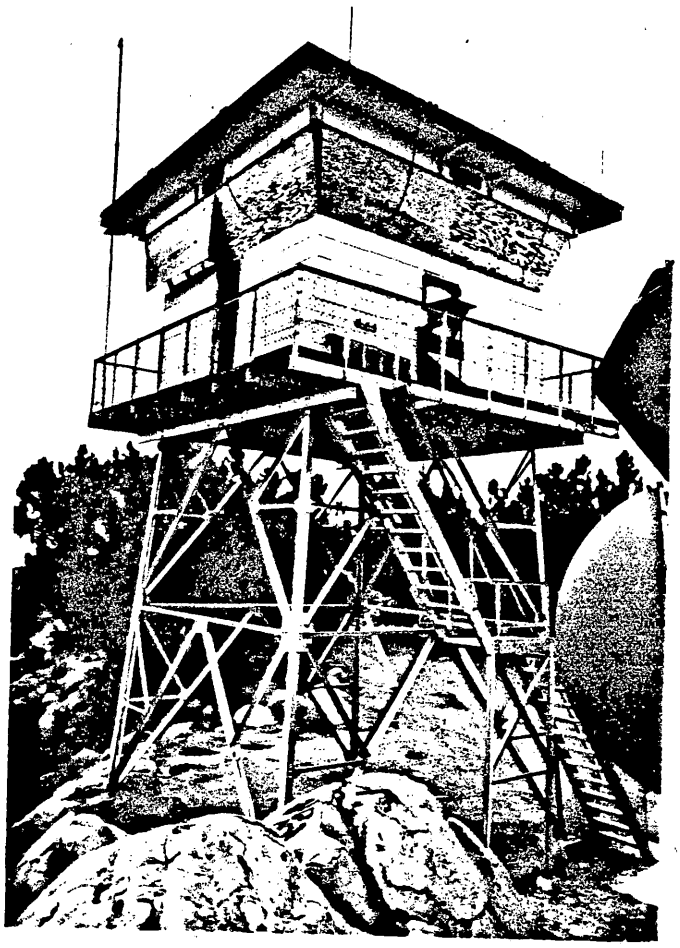
10' NETT. Orleans Mtn., Six Rivers N. F.

Plate 18

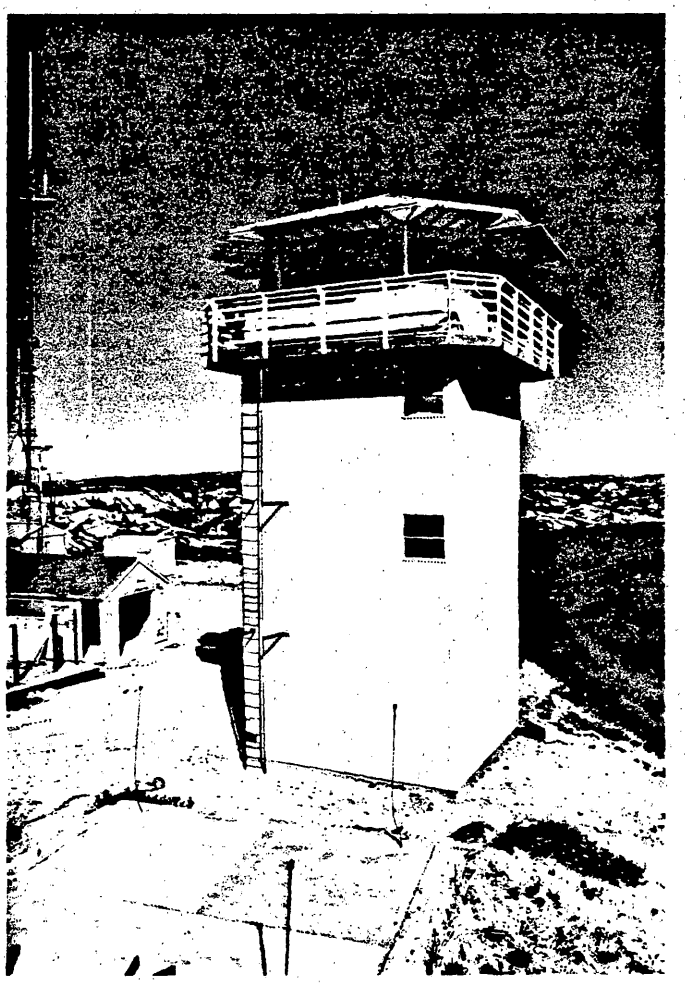
Cupola AWS. Green Mtn. Central Region, C.D.F.



Res. AWS, (left of H-B tower). Thorn Pk., Los Padres N.F.

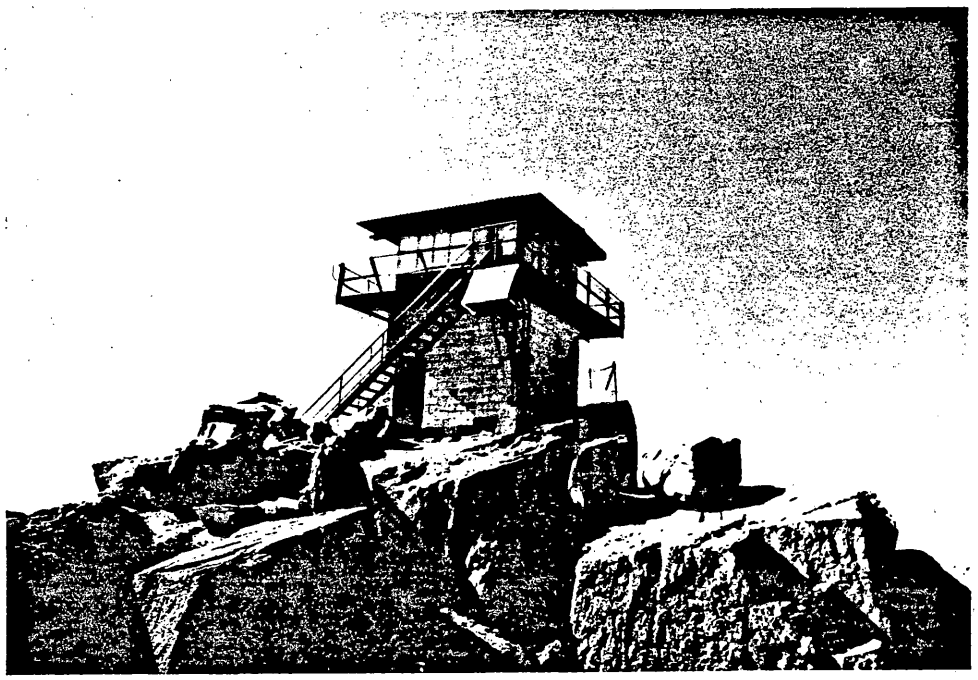


C10. LaCumbre Peak, Los Padres N. F.

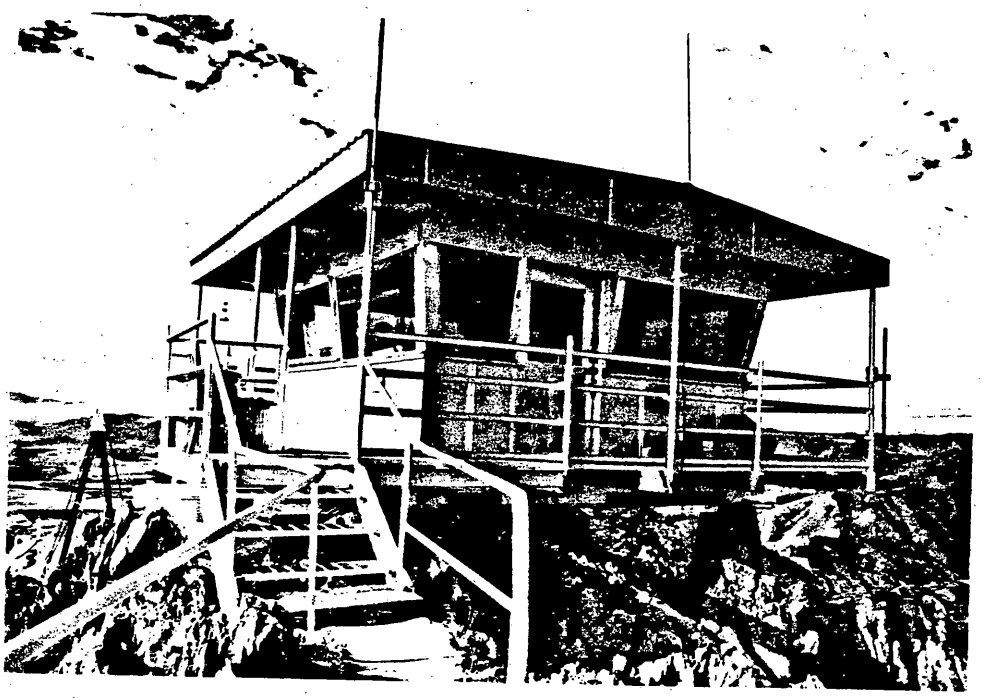


809R. Cold Springs, Coast Region, C.D.F.

CL10. Grizzly Peak, Shasta-Trinity N. F.



CL10 revised to C16. Sierra Buttes, Tahoe N. F.

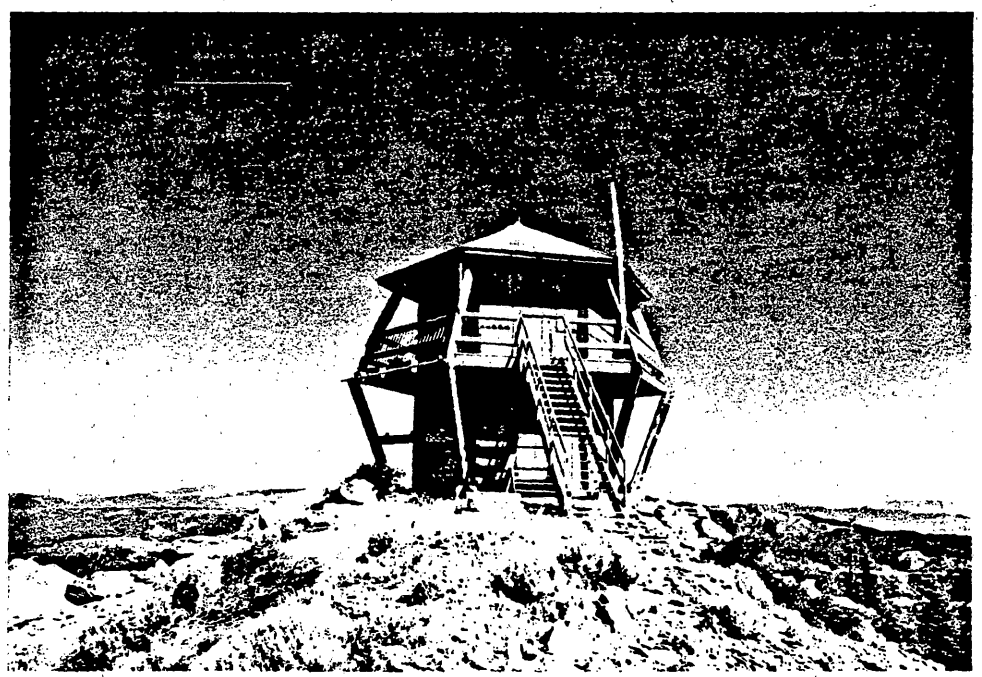


PLA. Paradise Craggy, Sierra-Cascade Region, C.D.F.

PLA on NEWF. Duzel Rock, Sierra-Cascade Region, C.D.F.

Lookout Chronology

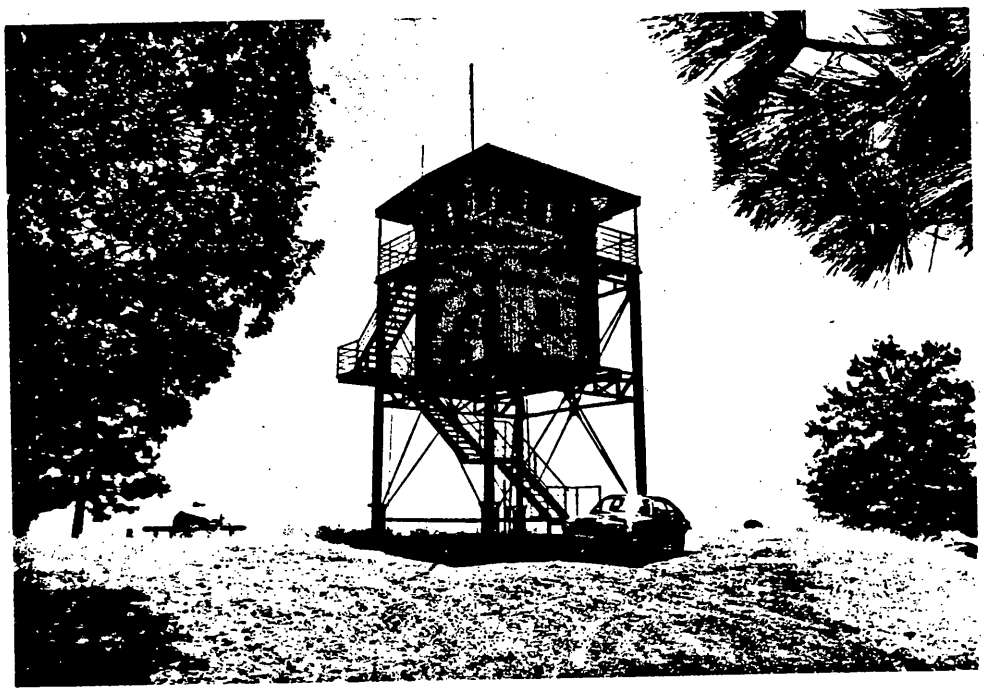
SDY, ground cab. Hull Mountain, Mendocino N. F.



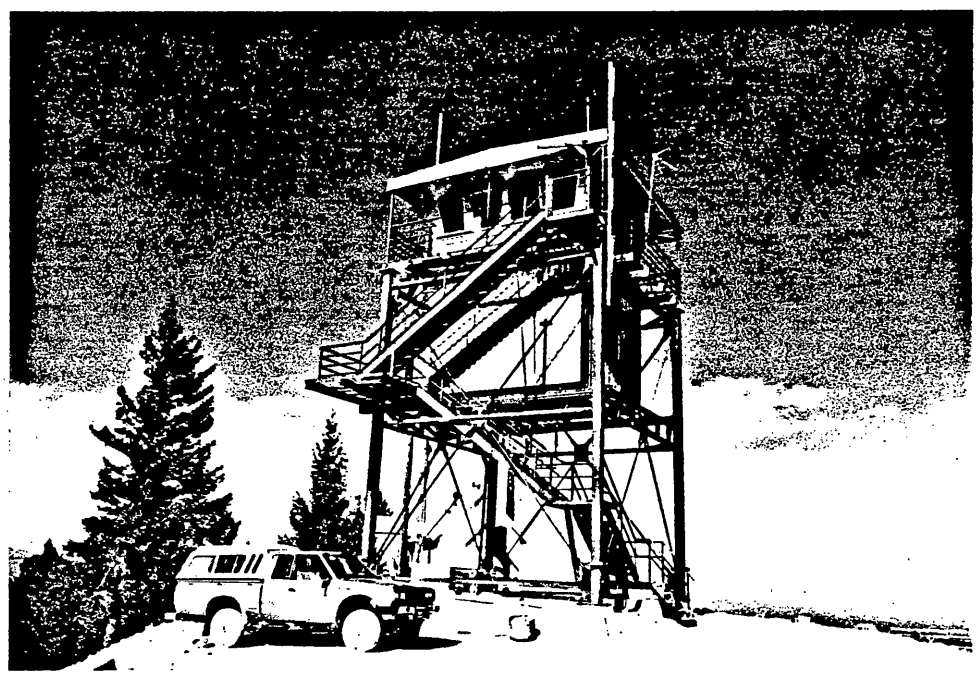
SDY. Pilot Peak, Plumas N. F.

Plate 24

Lookout Chronology



29' ABT. Shasta-Bear Mtn., Sierra-Cascade, C.D.F.



28' ABT. South Fork Mtn., Sierra-Cascade, C.D.F.

Lookout Classification

Returning to the classification scheme, the isolation of individual tower and cab types was accomplished by a four step process. First, a type would be created and named after the original designer or, if the designer had assigned a plan number, then the type would be labeled with that number, e.g. Coert duBois' plan 4-A. If the originator of the design was in serious doubt or unknown then the second step was to establish an association with a single manufacturer, e.g. Aermotor Company. When this failed then attempts were made to locate the earliest assigned regional office plan numbers, e.g. Region 5's BC and L series plans.[49]

A common problem with the planning number designations is the propensity for different agencies to assign their own numbers to the same plan.[50] Another difficulty is that the same standardized plan may end up with several minor variations. If the earliest or most commonly used plan number could not be comfortably assigned then the fourth (and final) step was taken and a generic label created to describe the standardized type, e.g. battered, enclosed timber towers comprise one type. When designs are clearly revised but not renumbered then the original number is retained and an "R" suffixed, e.g. the circa 1923 revision of 4A becomes 4AR.

It was also decided not to segregate highly similar designs of limited use. For example, trees comprise one type. Designs centered on a common theme or with minimal variation that are from the same architect(s) are grouped as one type, as in the case of Robert Sandusky's solar towers. Finally, if generic labels appeared to be too cumbersome or pointless, the design is simply left untyped and is so listed under the general category heading. The steel monopod tower on Lems Ridge is an illustration-in-point.

Indeed, lookout towers are similar to snowflakes in that no two are exactly alike. Hopefully a workable compromise has been struck between being too general and too pedantic. Every attempt has been made to develop generic labels which incorporated terms traditionally associated with a particular design.

Cabs have been individually typed, reflecting the fact that they were routinely designed apart from the towers which support them. The cumulative result of this procedure has been the assignment of types ranging from highly popular standardized structure designs to rather obscure experimental

designs. This insures recognition of prototypes and rare designs, in addition to the standards.

As a reminder, this typology was developed to isolate both specific and generic designs for inventory purposes and to aid in the evaluation of a lookout's historical significance. If a structure is a sole survivor, its significance may be somewhat qualified by comparing it to other types within the same category (its relation to the lookout population on the whole is also useful).

Although this research has been confined to Region 5 (California) some information was accessed from other parts of the Nation to insure greater applicability and historicity. A few designs from outside California have been included in the final classification scheme. Mention should also be made of the 1938 USDA, Forest Service publication "Standard Lookout Structure Plans." This booklet, a distillation of the many regionally drafted lookout plans, presented under one cover the most widely used and approved designs. It was intended to aid fire management in both the selection of structure type and in the bidding of construction contracts. Its influence in Region 5 was minimal by virtue of the fact that most lookout construction had already been accomplished by 1938.[51] These types have been included in this report and referenced as "USDA, Forest Service."

Lookout Classification

CATEGORY 1

(Observation Only)

Towers

Type	Description
AMC	Aermotor Company: battered, open galvanized steel angle iron X-brace towers, including USDA, Forest Service L-1400 series, to 120'.
BMC	Baker Manufacturing Company: battered, open galvanized steel angle iron X-brace towers.
CT1	USDA, Forest Service CT-1 (L-10001 to L-10500 series): battered, open timber towers, to 119'.
CT5	USDA, Forest Service CT-5 (L-11900 to L-12000 series): battered, open timber towers, to 41' (pack tower).
EDEC	Emsco Derrick and Equipment Company: battered, open galvanized steel angle iron X-brace towers.
L501	USDA, Forest Service: plan L5-01 wood platform.

Generic Types

BETT	Battered, enclosed timber towers.
NEWF	Nonbattered, enclosed standard woodframe.
NOTT	Nonbattered, open timber towers.
NOX-B	Nonbattered, open galvanized steel angle iron X-brace towers.
RTT	Round timber towers, battered and non battered.
Tree	Trees with or without crow's nest or cab.

Untyped towers included monopod towers, tripod towers, and structures exceeding four sides.

Lookout Classification

CATEGORY 1

Cabs

Type	Description
AMC	Aermotor Company: galvanized steel 7' X 7' cab. USDA, Forest Service plan L-1403.
B41	USDA, Forest Service B-4100 series: wood 7' X 7' cab.
BMC	Baker Manufacturing Company: galvanized steel cabs, dimensions unknown.
EDEC	Emsco Derrick and Equipment Company: no information.
KEV	Region 5 architect, Harry Kevich's 9' X 9' wood cab.

Generic Types

M8	Metal 8' X 8' cab.
W8	Wood 8' X 8' cab.

Untyped cabs include steel or wood cabs exceeding four sides and designs from other regions.

Lookout Classification

CATEGORY 2

(Live-in Observatory)

Towers

Type	Description
CT2	USDA, Forest Service CT-2 (L-11300 to L-11500 series): nonbattered, open timber tower, to 53'.
CT3	USDA, Forest Service CT-3 (L-11000 to L-11200 series): nonbattered, open timber tower (pack tower), to 40'.
CT4	USDA, Forest Service CT-4 (L-10600 to L-10900 series): battered, open timber tower, to 117'.
L-2	USFS Region 5 L-201: 12' prototype galvanized steel H-brace tower.
L-4	USFS Region 5 L-401: 20' standard galvanized steel H-brace tower.
L-8	USFS Region 5 L-801 30' standard galvanized steel angle iron K-brace tower.
RT1	USDA, Forest Service RT-1 (L-11600 to L-11800 series): round timber tower, to 40'
809R	CDF plan 809R: modified K-B enclosed by NEWF, to 30'.[52]

Generic Types

ABT	Nonbattered, open galvanized steel I-beam tower GSA atomic bomb testing tower (CDF).
BETT	Battered, enclosed timber tower including USFS Region 5 L-601 and L-701 series, to 30'.
BEWF	Battered, enclosed standard wood frame tower, to 30'.
BOTT	Battered, open timber tower including USFS Region 5 L-501 series, to 30'.

Lookout Classification

CATEGORY 2

Towers, Generic

Type	Description
BOX-B	Battered, open galvanized steel X-brace tower, to 67'.
BLK	Cinder or concrete block towers.
BRK	Brick or slump stone towers.
H-B	Nonbattered, open galvanized steel H-brace tower using steel I-beam corner posts (columns).
K-B	USDA, Forest Service L- 1600 series: battered, open galvanized steel angle iron K-brace tower, to 120'.
K,X-B	Prototype K-brace tower in which top section is of X-brace design to 20'.[53]
NETT	Nonbattered, enclosed timber tower including USFS Region 5 L-101 series, to 20'.
NOTT	Nonbattered, open timber tower including USFS Region 5 L-301 series, to 20'.
RAPS	Rustic Architecture from the National Park Service, USDI.[54]
ROCK	Natural stone or rock wall towers.
X-B	Origin unknown: battered, open galvanized steel angle iron X-brace tower, to at least 70'.

Untyped towers include steel and timber towers having more than four sides, special design towers (see Appendix I), and designs from other regions.

Lookout Classification

CATEGORY 2

Cabs

Type	Description
B-4	USDA, Forest Service B-4201 series: codification of R5's C3.
C3	USFS Region 5 1934 standard 14' X 14' wood cab BC-301 series: revision of R1.
C10	USFS Region 5 1944 14' X 14' steelframe cab BC-1001 series.
C14	USFS Region 5 1949 BC-1401 series: revision of C3.
CL10	Washington D.C. 1951 13' X 13' metal cab CL-104 series.
CL30	USFS Region 5 1963 CL-30-01 series: revision of CL10.
GDN	USFS Region 5 1914 12' 8" X 12' 8" wood cab.[55]
PLA	CDF architect, Mike Plesha's 1969 14' X 14' woodframe cab.
SDY	USFS Region 5 architect, Robert Sandusky's hexagonal wood cab and tower.
4A	USFS Region 5 Forester Coert duBois' 1917 (plan 4-A) 14' X 14' wood cab.
809R	CDF plan 809R: octagonal cab integral with the 809R tower.[56]

Generic

4AR	Circa 1923 revision of 4-A.
R1	USFS Region 1 1931 revision of 4-AR.

Untyped are cabs from other regions and special designs (see Appendix I).

Lookout Classification

CATEGORY 3

Cupolas

Type	Description
ALN	USFS Region 6 architect C. M. Allen's 1921 Ready Cut Lookout House design.[57]

Generic

AWS	U.S. Army Air Corps, World War II 20' X 12' (X 18' high) woodframe building constructed for the Aircraft Warning Service.[58]

Untyped are designs from other regions and special designs.

CATEGORY 4

(Restricted Visibility)

Secondary

Type	Description
4B	USFS Region 5 Forester Coert duBois' 1917 plan 4-B: standard woodframe lookout-fireman house with limited visibility.
C1	USFS Region 5 C-1: 1933 stand woodframe lookout-fireman house with glassed in porch.[59]
C2	USFS Region 5 BC-201 series: 1934 19' X 30' standard woodframe lookout-fireman house with glassed in bedroom.

Several versions of the category two BETT design were designated as secondary detection facilities but should not be included here. Other regions most likely have their own secondary designs which are not included here.

Lookout Classification

CATEGORY 5

(Cannot Accommodate a Rangefinder)

Dwellings

Type	Description
4C	USFS Region 5 Forester Coert duBois' 1917 plan 4-C: standard woodframe lookout-fireman house.
C1A	USFS Region 5 C-1A: 1933 standard wood frame lookout-fireman house.[60]
C2R	USFS Region 5, C-201 series: 1934 19' X 30' standard woodframe lookout-fireman house revised with standard windows.[61]
AWS	U.S. Army Air Corps 20' X 14' woodframe house constructed for the Aircraft Warning Service.

A wide variety of structure designs have been used for housing lookout operators; however, very few of these were ever standardized solely for detection use. A study into administrative site history would doubtless yield much information on standard residential design types. Until such work, only the above designations can be offered with any reliability. Untyped special designs and designs from other regions are also excluded.

Lookout Classification

CATEGORY 6

Portable, Generic

Type	Description
Tent	Tents.
OBT	Observation only trailers.
R1M	Region 1 mobile cupola trailer.[62]
PB	Portable buildings.[63]

Until information is uncovered, specific trailer manufacturers have been omitted. The Region 1 cupola trailer may have a plan number which should be substituted for the above generic label. No information regarding portable buildings has been uncovered.

CATEGORY 7

Unclassified

As remarked earlier, segregating these buildings by structure use may be one means of recording. Specifically, (especially relevant to a nation-wide survey) it would be enlightening to know how many water towers, grain elevators, visitor centers, et cetera, have been utilized for fire detection. Such datums have little bearing on the application of the historic significance evaluation methodology presented in part three but it is useful in assuring full documentation of our fire detection history.

Lookout Classification

Within each type are a number of minor variations that should be notated. Such things as tower and cab height and width, catwalk existence and dimensions, exterior materials used, and other components do effect a building's general appearance. When these details center around a basic design type then an array may be created to quantify such data. In like manner, the acknowledgment of different models from a single manufacturer should be performed; an example of the later follows (quantities are fictitious)[64]:

CATEGORY 1

Aermotor Company

Model:	LX24	LX25	LS40	LS40K	MC39	MC40	Total
30':	3	1	10		1	5	20
45':	1	1					2
60':	1	1	9	3	7	6	27
80':			5	2	2		9
100':			1	1	2	1	5
Totals:	5	3	25	6	12	12	63

This is only one way that data about a given type may be listed. One last note, as more information is gathered the above classification system is readily adaptable to revision and expansion. Regardless of how lookouts are eventually classified (for a nation-wide survey), cross-tabulation with Calfifornia's inventory should prove of minimal difficulty.

PART THREE

Lookout Evaluation Methodology

*"The lookout house is probably the most distinctive structure used in forest-fire control. It now represents the product of 20 years of evolution and reflects many features that have become standard through long experience by the Forest Service. The details of design vary and are still in process of change, but the main features now conform closely to the essentials of a common design."**

*"Planning, Constructing, and Operating Forest-Fire Lookout Systems in California" Circular No. 449; U.S.D.A. 1937

Lookout Evaluation Methodology

The problem facing the historian or archaeologist charged with determining a fire lookout's historical significance has been the lack of a specific criterion to "rate" lookouts. The crux of the situation is that administrators need, and demand, objective reason(s) to justify the retention and protection of ageing buildings. While the National Historic Preservation Act of 1966, as amended (NHPA), provides basic guidelines, the difficulty in applying NHPA to fire lookouts has been the unavailability of historical information and the nonexistance of an inventory.[1] The methodology presented herein has taken the NHPA framework and applied it directly to the research data obtained by the present study.[2]

The evaluation method attempts to address the most critical aspects of lookout history yet retain a certain degree of simplicity in order to guarantee consistency and minimal confusion in application.[3] The evaluation process covers three basic areas: buildings, sites and context. Before elaborating on these, some basic presuppositions must be presented.

A liberal interpretation of NHPA guidelines gives credence to the argument that all fire lookouts qualify for National Registry inclusion. This line of reasoning is made easier by the fact that at least two fire lookouts have already been successfully listed.[4] But it is readily apparent that we will not be able to retain all existing structures. Therefore, the best representatives must be identified for prioritized action.

Even in its broadest application, fire lookouts represent a finite and dwindling population but a further refining of what is meant by "fire lookout" can be had. The contention of this report is that fire lookouts represent a distinct thematic group within the general history of wildland fire management. Wildland fire management, in turn, constitutes a major component of American Conservation history.[5] As such fire lookouts can be distinguished from other forms of fire detection, such as the early efforts of the Southern Pacific Railroad Company, to include only those facilities which play(ed) a role in the conservation of America's timber and range lands, and watersheds. This effectively limits the time span to the years 1864 to the present.[6] A timeline follows:

Lookout Evaluation Methodology

1864-1900: Beginnings of concerted action to protect forest, range and watershed lands from wildland fire.

1900-1910: Emergence of fire detection; beginning of primary designations; first permanent facilities.

1911-1920: Passage of Weeks Act providing money for state programs; Coert duBois lays foundation for wildland fire control; first standardized lookout facilities; beginning of National Park Service rustic architecture.

1921-1930: Passage of Clarke-McNary Act providing substantial increase to state programs; beginnings of CDF, Los Angeles County, and isolated local level fire detection programs; numerous fire control and detection studies performed by USFS Region 5.

1931-1940: The 1930 fire detection study implemented; California unemployment relief program (SERA); C.C.C., W.P.A., N.R.A., and allied Federal employment programs; A.W.S. testing begins.

1941-1950: World War Two Aircraft Warning Service; CDF fire protection increasingly autonomous; first decline in lookouts.

1951-1960: Forest Service no longer preeminent in wildland fire control; new technology decreases need for lookouts; population shifts effect lookouts; short term Ground Observer Corps commissioned; Increase Manning Experiment undertaken.

1961-1970: Forest Service continues cost-benefit studies on lookouts; CDF continues aggressive maintenance and replacement program-- however, State and local lookouts continue slow decline; attitude change toward fire exclusion policy; attrition of Federal lookouts accelerates.

1971-1980: Forest Service experiments with solar energy; CDF increases funding to ex-Forest Service lookout stations; fire management undergoes

major operational funding cuts.

1981- Continued reduction of lookouts; increased removal of abandoned structures; discussions on total lookout abandonment.

Closer examination of fire lookout history, as discussed in previous sections of this report, has shown that the most active period for our fire lookouts commenced in 1905 (with the birth of the U.S. Forest Service) and ends with the completion of the 1930 fire detection plan in 1941. While new buildings have been erected since that time, no new advancements (save for radio technology) have been made for fire lookouts.[7] With this as a guideline, the attributes of an existing lookout (regardless of how recently built) should reflect the traditional qualities associated with lookouts from 1905 to 1941. The only major qualification to this concerns the significance of the A.W.S. program of World War Two. Therefore the time period is adjusted to include these years, thus resulting in a time frame of 1905 to 1945 inclusive.

Prior to 1945, the shared experience of the majority of lookout stations was as follows: 1- remote to semi-remote settings often with rugged access (the C.C.C. and A.W.S. programs did substantially improve the forest road system). 2- magneto telephones (telephones were installed as quick as the equipment could be obtained), AM radios (radio introduced in the mid 1930s, FM in the 1950s)[8]. 3- no electricity (butane, later propane, came about during the 1930s, Coleman and wood stoves prior to that). 4- an absence of any other mountain top users, specifically microwave towers and other communication facilities.

Thus, the optimum candidates for preservation are: lookouts which retain a semi-remote to remote physical setting; are accessed only by dirt roads and/or trails; have retained traditionally associated furnishings and outbuildings; and are isolated from nondetection facility incursions. It might be added that a good candidate should still serve a useful function in fire detection if technology were to lapse.[9] Finally, in accordance with NHPA, good candidates should exhibit high integrity and an association to known important historical events and/or personages. The evaluation form is presented on the next page.

Historical Significance Evaluation

Fire Lookouts

Site Name: _____

Agency: _____

District: _____ Legal _____

Structure Type: _____ Year Built: _____

Criterion	Value	Rating
A. Structural:		
1. Integrity of Design	12	
2. Condition of Building	12	
3. Aesthetics	06	
4. Interior furnishings	04	
5. Special features	04	
6. Age, (over 50 years)	05	
B. Site:		
1. Integrity of location	12	
2. Natural aesthetics	10	
3. Presence of outbuildings	05	
4. Remoteness from civilization	05	
C. Context:		
1. Association	15	
2. Rarity	10	
Total:	100	

Rated by: _____ Date: _____

Lookout Evaluation Methodology

To reiterate, the procedure being presented here is based on the belief that the significance of a fire lookout facility is heightened when the building appears the same today as when it was built and the physical setting displays the "ambience" or "feeling" of the traditional fire detection station prevalent in California prior to 1945. Furthermore, the aim is to single out the best examples for registry inclusion not the only candidates for nomination. Explanations for each rating component follow; points to be assigned are listed parenthetically.

STRUCTURAL

Integrity Both building design and appearance are to be evaluated. Cosmetic alterations are of lesser concern than major modifications.

Good (12):

No changes to building other than annual painting and/or minor cosmetic changes to siding, roofing, stairway, and catwalk. Minor cosmetic design alterations intended to address safety concerns.

Fair (06):

Major cosmetic alterations to cab, siding, catwalk, stairway and/or roof. Room additions to structure that are in keeping with original design.

Poor (00):

Major replacements of nonoriginal nature to building such as cab replacement, tower framing altered, rooms added or greatly modified, and/or building radically converted to non-detection use. Building relocated to non-detection site.

Condition The mere fact that a building has weathered the years with little degradation is due either to original workmanship or responsible manage-

ment; however, if a building's condition gives heavy proof for the law of entropy then it makes little sense to expend large sums in what ultimately could be a losing battle.

Good (12):

Building requires minor restorative work and/or routine maintenance.

Fair (06):

Building requires major restoration.

Poor (00):

Building is unsafe and unsavable.

It should be clarified that an inverse relationship exists between a building's integrity and its condition when non-original modifications have been performed in order to upgrade a facility's condition. In otherwords, accurate restoration can dramatically improve both a building's integrity and condition ratings; whereas remodeling without regard to the original design will substantially lower the integrity value (negative impact). Of course, modified buildings left to rot, end up with the severest rating.

Aesthetics Buildings of stone and wood fair better than their steel, concrete, and cinder block counterparts as regards their general eye appeal. Also important is the "pride in workmanship" which is evidenced by proper assembly of building materials and will, therefore, contribute to a greater appreciation for the facility.

High (06):

Attractively constructed stone, timber, and brick buildings.

Medium (03):

Attractive steel/wood buildings. Buildings showing care in construction.

Low (00):

Buildings primarily constructed of steel or metal. Buildings exhibiting poor workmanship or highly unattractive.

Interior

While the lack of original furnishings can be easily mitigated through careful acquisition, it is important to acknowledge those buildings which still have their original furnishings intact. (In all cases, the interior furnishings should be contemporary to the building.)

Good (04):

All, or nearly all, interior furnishings intact and in good condition.

Fair (02):

Appliances, plumbing and rangefinder intact and in fair to good condition (at least 1/2 the furnishings are contemporary to the building).

Poor (00):

Furnishings removed or in poor (useless) condition.

Features

To be addressed are attractive but uncommon variations to a standardized plan. Some (but not all) of the things to look for are:

Gable or Gambrel roof
Dimensional anomalies
Stone foundation
Polygonal design
Redwood construction

Shingle siding
Root cellar
Stone or brick fireplace
Finished ground floor

Features — Rating scheme is as follows:

High (04):

Several special features, entailing significant extra costs.

Few (02):

Up to two special features or several minimal cost additions.

None (00):

No significant deviation from standard plans.

Only through comparison of plans and photographs can these "special features" be identified. Those which appreciably add to the aesthetics (and cost) of the building and/or reflect local pride or requirements are to be acknowledged. Certain basic variations which occur within a standardized design type, such as tower heights, should not be confused with these less typical special features. When dealing with major variations within a given type it is encouraged that each variation be preserved if such candidates meet the other criteria. Finally, special features must always be items which were available at the time of construction and not something that was added later.[10]

Age — Buildings 50 years or older are assigned 5 additional points. Age and rarity are not necessarily interrelated. As an example, most Forest Service lookouts were erected during the 1930s. While the fifty year milestone is in NHPA, its importance has been devalued here because of the finite condition and long range outlook for fire lookouts.

Lookout Evaluation Methodology

SITE

Integrity As mentioned earlier, the best candidates are those which reflect the pre-1945 era and must be a traditionally designated detection point.

Good (12):

No encroachment of nondetection facilities (e.g. houses, communication towers, microwave towers, commercial buildings are absent); no paved roads to site; no population centers or subdivisions within 5 miles.

Fair (06):

Encroachment of communication equipment; microwave tower(s) within 100' of lookout but not on or next to lookout; establishment of permanent residents within 5 but no less than 1 mile; highway or freeway within 1 mile of site.

Poor (00):

Major infiltration of communication equipment; microwave tower(s) adjacent or on detection facilities; housing and/or commercial developments within 1 mile; site is not a designated detection point.

Aesthetics More points are awarded for sites which are located in especially unusual or beautiful settings. Generally, such sites necessitated the expenditure of greater efforts to construct the lookout station. In evaluating the natural aesthetics, only the area within a 1/2 mile of the lookout building is considered.[11]

Good (10):

Wilderness or semi-wilderness setting (maybe so designated[12]); sharp, high peaks, rugged ridges, or precipitous terrain and escarpments in- curring troublesome logistics for construction; difficult vehicular or (score

highest) trail only access.

Fair (05):

Prominate mountains, hills, ridges, etc. with rough vehicular access; sites of unusual floral and other scenic qualities (not the view from the area, the view of the area); sites spared from man-caused alterations (excepting fire).

Poor (00):

Easy access (standard vehicle); mountains, ridges, hills of nondescript nature and common vegetation.

Outbuildings The presence of historically intrinsic equipment and outbuildings is viewed as having a significant positive impact on the overall "feeling" for the site. All items to be considered should relate to the lookout building at the time it was constructed. For example, a garage built in 1934 which is adjacent to a lookout tower built in 1969 is not to be rated as significant unless it is utilized and harmonizes with the design of the existing lookout. In otherwords, items under this heading should be intimately interrelated to the main detection facility (and preferably contemporaneous). In many instances, garages were not constructed; however, there are other items to be considered such as:

Garages
Outhouses
Watertanks
Open wire telephone systems
AWS dwellings
Weather stations
Signs, flag poles, rock work

The degree of cost, importance, condition, and amount will dictate the points awarded (up to 5 total). In particular, the highest score is given where several major outbuildings exist in fair to good condition. Portable chemical toilets

and plastic or fiberglass water tanks are not to be rated due to their rather recent introduction.

Remoteness — Under integrity of location, mileage is computed by airmiles ("as the crow flies"), here actual road mileage from the nearest asphalt paved road is considered. When a lookout site is accessed by many miles of dirt road and trail it will provide a greater respect for the loneliness and hardship that the lookout operator would have faced (especially reflective of the pre-1945 era). Rating is as follows:

12 or more miles from paved roads	= 5
9 to 12 miles	= 4
7 to 9 miles	= 3
5 to 7 miles	= 2
Over 3 miles	= 1

CONTEXT

Association

The "quality of significance" of a structure is increased if it can be clearly associated with "events that have made a significant contribution to the broad patterns of our history." As mentioned in the opening paragraphs of this section, all buildings constructed specifically to serve as a fire detection facility are viewed as significant contributors to the history of American Conservation and are automatically to be awarded at least ten points under this evaluation scheme. Other events of national importance would be the Civilian Conservation Corps and Aircraft Warning Service. Events of a more localized nature would be the California SERA program, the IME studies, the GOC, and the Weeks and Clarke-McNary Acts. If any of these are closely associated to the site then up to 5 additional points are assigned. Close association must be documented in all cases.

Significance also increases where a direct link can be established to "the lives of persons significant in our pasts." Incidental visitation is to be discounted, an intimate association must be established. An example to be wary of is the former practice of the California Department of Forestry to name lookout stations after past employees, while of interest, many individuals so honored only had a cursory relation to their namesakes.

The only important link uncovered between lookouts and "significant persons" would be buildings based directly on Coert duBois' 1917 design. duBois' significant contribution to the founding work of wildland fire control coupled with his early grasp of fire detection planning is reflected in a very tangible way by fire lookouts based on his 4A design. Of course any individual who meets the NHPA quidelines and had a known, close relation with a given lookout building would be cause to assign a higher significance value for that lookout.

It may eventually be agreed to that the Aermotor Company towers have added significance due to their early use and nation-wide distribution. This potential importance of Aermotor Company lookouts warrants careful attention when deciding the ultimate fate of these towers.

Buildings that "represent the work of a master, or that possess high artistic values" are to be considered significant. As for the latter case this would aptly apply in regards to the National Park Service's rustic architectural period of 1917 to 1941. As for the former, no architect, engineer or designer (other than duBois) has been determined to meet the NHPA guidelines. However, a case might be made for Forest Service architect Robert Sandusky, the designer of the nationally recognized solar lookout tower on Antelope Peak in the Lassen National Forest.[13] To clarify, "high artistic values" can be appreciated exclusive from who designed the building.

Finally, a lookout's significance increases if it is able to "yield information important in... history." In addition to the general theme of Conservation, buildings which reflect a significant milestone in facility design, general fire management activities, or (perhaps) public-forestry relations might be deserving of special acknowledgement.

In considering the foregoing, more points are awarded when a close association can be shown (up to 15 possible). On a seperate page, the basis for points so assigned should be documented. By tabulating this information, buildings having unique associations will be identified. If this item is treated as a seperate and overriding evaluation criteria, agencies desiring to preserve a given lookout which otherwise scores poorly can justify such protection. This should assist in the survival of buildings whose significance falls outside the parameters of building and site integrity.[14]

Rarity — This factor addresses the number of lookout cabs and/or towers of a specific design type that are still in existence. It may also serve as a measure of the popularity of a specific type. By cross-referencing the lookout classification section with the statistical abstract in section four design type rarity can be determined for California only. A sliding scale is applied:

10 or more = 1 point
9 extant = 2 points
8 extant = 3 points
7 extant = 4 points
6 extant = 5 points
5 extant = 6 points
4 extant = 7 points
3 extant = 8 points
2 extant = 9 points
1 extant = 10 points

In reviewing the evaluation method, the major components of the scoring system center on building integrity and condition, site integrity and aesthetics, and association and rarity. To capsulize the evaluation methodology, the evaluator should be asking the following questions:

How accurate does the building reflect its original appearance?

Is the building's condition such that preservation is practical?[15]

Lookout Evaluation Methodology

Does the overall site retain those qualities traditionally associated with lookouts between 1905-1945?

Is it a designated detection point, confirmed by fire management plans?

Is the site of an especially attractive nature?

Are there special features about the building(s) and/or site (outbuildings) which deserve extra attention?

What are the known associations to persons and events of the building and/or site?

Is the building a sole survivor of an identified type; if not, is it the best representative left?

Is the building's age of such significance that it warrants further consideration?

Point assignments constitute a continuum under each item (from 0 to whatever the particular maximum is); the preceding explanations are intended to delineate the best, average, and poorest examples; in practice, lookouts will score somewhere in between. The highest possible score is 100. Lookouts achieving 75 or more points are defined as ready candidates for nomination to the National Register. Lookouts scoring less than 70 points are to be omitted unless there is a clearly established high rarity factor in either association or design type. Those falling between these ranges are reviewed case-by-case to determine ultimate disposition.

Where two buildings are encountered, specifically an observation only tower with accompanying C-2 building, the lower score of the two may be used to determine the overall rating. (This evaluation scheme not only will help to identify the best example(s) of a given design type but can also aid in identifying the best overall lookout site(s)). The ease of reconstruction or restortion might be taken into account before making a final determination. For example, steel towers are easier to restore or replace than C-2 houses. Another problem, not faced in California, would be dealing with sites with two lookout towers. In general, this

evaluation methodology would discourage giving high ratings to sites with old and new towers, side-by-side, because the new facility detracts from fully appreciating the older building.

In the final analysis, it is admitted that a certain degree of subjectivity still exists; however, this evaluation methodology hopefully goes far beyond the existing highly arbitrary (and all too often capricious) process. In application (excluding trees), approximately three dozen of our more than 250 lookouts have been determined as excellent candidates for nomination to the National Register. Some 110 sites fall below the 70% mark, the remaining lookout stations will require careful scrutiny by agency planners.[16]

PART FOUR

Statistical Abstract

*"As a cooperative effort, designed to bridge quickly the gap between investigation and final application, successfully carried out to a logical conclusion, touching as it did every corner of the state, catching the imagination and winning the support of many individuals and organizations, and consequently growing into a state-wide pattern of an integrated detection system, this project has developed and strengthened the teamwork essential to successful state-wide fire control."**

*"Improving Forest Fire Protection in California" by A. A. Brown. Journal of Forestry 33:923, 1935. (Report on the Fire Detection Studies of the 1930s.)

Statistical Abstract

The information presented below was current as of June 1, 1986. A total of 286 fire detection sites still had buildings or detection trees (slightly over 300 sites were inventoried and a total of over 600 detection sites have been identified). Because of the difficulty in tracking down abandoned sites, a few locations may have escaped notice. These statistics will be effected by the continuance of lookout removal. With these qualifications, the following is offered. Agency distribution of sites containing buildings or trees was:

United States Forest Service.....	188
National Park Service.....	6
Bureau of Land Management.....	3
Bureau of Indian Affairs.....	1
California Department of Forestry.....	78
California Dept. of Parks and Recreation....	1
County Fire Departments.....	7
Private	2

National Forests, segregated:

Angeles:	8	Plumas	14
Cleveland	6	San Bernardino	11
Eldorado	13	Sequoia	12
Inyo	2	Shasta-Trinity	23
Klamath	15	Sierra	8
Lassen	12	Six Rivers	12
Los Padres	14	Stanislaus	9
Mendocino	8	Tahoe	10
Modoc	7	Toiyabe	1

Lake Tahoe Basin Management Unit: 3

Statistical Abstract

Two sites listed for the San Bernardino National Forest are privately owned (a third was privately built). Only 9 sites should be credited to this agency reducing the Forest Service total to 186. State-wide, ten sites contain trees and five sites have buildings in considerable ruin.

Tower heights consist of the distance from the ground to the base of the cab or top of catwalk (not rail). All measurements have been rounded off to facilitate comparison of tower types. Likewise, measurements which include tall concrete piers (tower "feet") are adjusted to reflect only tower height not overall height. Because of the safety hazard (not to mention difficulty) associated with attempting to measure total cab height, these measurements were not recorded.

CATEGORY 1

(Observation Only)

Aermotor Company towers (AM).

Height	USFS	CDF	Total
30'		2	2
45'	2	1	3
60'	4	9	13
80'	2	1	3
90'		1	1
100'	2	1	3
Totals:	10	15	25

The Sacramento National Wildlife Refuge owns a 100' Aermotor tower; I am told that the Federal Fish and Wildlife Service may still have a number of Aermotor towers throughout the United States, all a product of the CCC era. The CDF towers have metal catwalks and rails. All existing towers are believed to be of the LS-40 (or LS-40K) type and are topped with 7' x 7' x 7'6" (ceiling height) metal cabs. The

following design types within this category are extinct:

BETT	NOX-B
NETT	LX-24
NOTT	LX-25
RTT	

Nine trees and one snag are still standing, plus one low platform. Two KEV types and several other wood or metal cabs have been inventoried. A few miscellaneous towers, including one BOTT in ruins, still exist.

CATEGORY 2

(Live-in Observatories)

Battered, enclosed timber towers (BETT)

Height:	7'	8'	9'	10'	11'	12'	13'	15'	17'	20'	30'	T
USFS:	1	1		2	1	1	3		3		2	14
CDF:			1					1		3	5	10
Others:										1		1
Totals:	1	1	1	2	1	1	3	1	3	4	7	25

Nonbattered, enclosed timber towers (NETT)

Height:	5'	7'	9'	10'	11'	17'	20'	22'	T
USFS:	1	1	6	3	5	1	1		18
CDF:					1		2		3
Others:				1				1	2
Totals:	1	1	6	4	6	1	3	1	23

Statistical Abstract

Battered, open timber towers (BOTT)

Height:	16'	17'	21'	24'	30'	T
USFS:	1	1	2	1	1	6
Others:						
Totals:	1	1	2	1	1	6

Nonbattered, open timber towers (NOTT)

Height:	22'	23'	30'	T
USFS:	1	1	1	3
Others:				
Totals:	1	1	1	3

Steel K-brace, L-1600 series & L-801 (K-B)

Height:	6'	11'	14'	20'	30'	40'	55'	67'	T
USFS:		1		9	23	2	4	1	40
NPS:				2					2
CDF:	1		1	1	4				7
Others:					1				1
Totals:	1	1	1	12	28	2	4	1	50

Steel H-brace towers, L-401 (L-4)

Height:	20' only	Total
USFS:	18	18
CDF:	2	2
Others:		
Totals:	20	20

Statistical Abstract

Steel K,X-brace towers (K,X-B)

Height:	20' only	Total
USFS:	2	2
CDF:	1	1
Others:		
Totals:	3	3

CDF wood enclosed, steel modified K-brace (809 & 809R)

Height:	11'	20'	30'	Total
809:		4	4	8
809R:	1	2	6	9
Totals:	1	6	10	17

Ground Cabs

Type:	GDN	4A	4AR	R1	C3	C16	PLA	SDY	Total
USFS:	1	2	1	1	11	1		1	18
CDF:							1		1
Others:									
Totals:	1	2	1	1	11	1	1	1	19

Presented on the next page is a breakdown of nearly all typed cabs as distributed by tower type. This is a cumulative total, all agencies. Except for the following, abbreviations for tower and cab types will be found in Part 2. C16 = CL10 and CL30 types combined. Misc. = miscellaneous, includes both untyped and a few rare typed towers. Mis = miscellaneous, includes untyped and a few rare typed cabs; space constraints precluded including all types. Also added under the "Mis" column are towers which have been "decabitated," i.e. the cab has been removed; consequently, the totals at the end of each line will indicate the total

Statistical Abstract

State-wide distribution of a given tower type. G.C. = ground cabs, includes cabs with no tower (less than 3').

Live-in cab, distribution by tower

Type:	GDN	4A	4AR	R1	R4	C3	C10	C14	C16	809	PLA	SDY	B42	Mis	T
G. C.:	1	2	1	1		11			1		1	1			19
ABT:											3				3
BOTT:				2		4									6
BETT:			2	2		17			1		2			1	25
BEWF:						1								1	2
BLK:					1	1		4	8					2	16
BRK:									2						2
K-B:			1	1		19	1	2	20		4			2	50
K,X-B:				1					1		1				3
L-4:						18								2	20
NETT:			1	3		17		1		1					23
NEWF:											9				9
NOTT:			1					1					1		3
ROCK:				1		2									3
SDY:												2			2
809:										8					8
809R:										9					9
Misc.:									2		3			6	11
Total:	1	2	6	11	1	90	1	8	35	18	23	3	1	14	214

Not included in the above are 4 buildings belonging to the National Park Service. All four are from the rustic architecture period (RAPS) and were built between 1930 and 1940. Two cabs are closely based on the 4A design and the other two are of the C3 design. Two towers are of rock and the other two feature redwood and granite.

From the above chart it will be observed that the C3 (BC301) design followed by the C16 (CL-104 & CL-3001) designs are the most prevalant. However, it should also not escape notice that the vast majority of our detection sites boast of live-in observatories, carrying on duBois' early day idea. Furthermore, over 100 of the cabs are highly reminiscent of duBois' 4A plan.

BETT, NETT, L-4, and (by far) K-B tower designs are the most predominate. It should be pointed out that timber towers have suffered the worse in terms of surviving numbers. To derive a simpler basis for type rarity (for historical significance evaluation), timber towers can be segregated as such:

Storage:	3' to 8'
Single Story:	9' to 15'
Two Story:	16' to 22'
Three Story:	27' to 32'

As a reminder, not all construction plans were available for review; therefore, the assignment of a specific type was arrived at by both date of construction and the appearance of conformity to a known or deduced design. This approach should insure minimal error.

CATEGORY 3

(Cupola)

Except for the World War Two AWS buildings, no standardized cupolas exist in California. There are three AWS buildings, one each: CDF, BLM, and private ownership. The San Bernardino National Forest woodframe,stucco wall, red tiled lookout-fireman station on Red Hill (BC-501) still stands but is privately owned. All told, there are only 8 cupola type buildings at detection points.

Statistical Abstract

CATEGORY 4

(Secondary Lookouts)

No construction plan was discovered for the C1 building; if any buildings do exist they have been modified. In like manner, the C2 drawings have eluded detection but there is good evidence to indicate that there were two styles and that both still exist. The difference between the two C2 styles lies in the simple fact that one version has large windows (in the bedroom area) which allow for the placement of a firefinder, the other style has smaller windows (or none at all) thus serving solely as a residence. This latter type of C2 is listed under Category 5.[1]

Of the secondary lookout C2s, the Forest Service has 4 located at clearly identified secondary detection points and six located adjacent to Aermotor towers serving as residences only. Several Forest Service Guard Stations are based on this design and have been listed (in fire management plans) as secondary lookouts despite the fact that they could not accommodate a firefinder. Only two of these were inventoried and are listed in category 5. Until a complete administrative site inventory is performed, data about the C2s (and C1s) will be incomplete. CDF has five C2s, two of which could serve as a secondary lookout. No 4Bs exist.

CATEGORY 5

(Residences)

Type:	C1A	C2	AWS	Untyped	Total
USFS:	1?	2	3	9	15
CDF:	3?	3		5	11
Others:					
Totals:	4	5	3	14	26

As with the C1, no C1A plans have been found; therefore, the dwellings listed as C1A may not be correct. Two of the untyped residences are believed to have been built for the AWS program but they differ significantly from the listed AWS

buildings. At least three other residences are in ruins and another was privately built. As mentioned, the two USFS C2s are located at "secondary detection points" but they do not have adequate window space (one has been modified).[2]

CATEGORY 6

Portable Facilities

Agency:	USFS	CDF	BLM	Total
Trailer residence:	2	2	1	5
Mobile cupola (R1M):	1			1
Trailer observatory:	1			1
Totals:	4	2	1	7

Information on the make and year model of the trailers was not obtained. The R1M has had the cupola removed. No tents and no portable buildings exist.

CATEGORY 7

(Unclassified)

The California Department of Parks and Recreation administers the Mount Diablo summit building which housed a CDF lookout for a number of years. A.T. & T. and Group W Cable, Inc. each own large cinder block buildings which were constructed for communications use. The smaller building is topped with a C16 cab and was listed in category 2 (under miscellaneous towers within the live-in cab distribution chart). The A.T. & T. building is quite large and is topped with a special design H-brace tower with live-in cab. The tower and cab were intended for primary fire detection work and, thusly, are also listed within the miscellaneous section of the live-in cab distribution chart. The supporting cinder block building could be listed within this category. One last note, a lookout-fireman utilized the solar tower on Mount Wilson for supplementary detection but the firefinder was rarely, if ever, taken up on top.

Statistical Abstract

It must be reiterated that (regrettably) only the best candidate(s) of a given type will have a genuine chance for survival as historic properties. When assigning structure rarity values, all local agency buildings must be omitted. Another important consideration is the fact that the California Department of Forestry's lookouts which exceed 20 years of age have, for the most part, been significantly modified. In short, it will be the United States Forest Service which will have the greatest selection in both quanity and quality.

In summation, the categorical totals are:

Category 1:	Cabs: 34	47	Towers: 31
Category 2:	Cabs: 214	218	Towers: 199
Category 3:		9	
Category 4:		11	
Category 5:		25	
Category 6:		7	
Category 7:		3	
Total facility count:		320	

Facility count is arrived at by adding in the total category 2 cab count plus four towers which have lost their cabs. Several sites have more than one facility, that is why this figure exceeds the site count. In addition to these, at least 9 other facilities have been relocated to non-fire detection point locations.

Plans have not been located for the many garages still in existance. During the CCC era garage plans carried various "J" prefixes. The chart on the next page is an estimate only on how many of the standing garages were based on one of the various J construction plans. As with the lookouts, CDF garages generally tend to have more modifications than the USFS counterparts.[3]

Garages

Type:	J-buildings	Untyped	Total
USFS:	22	9	31
CDF:	6	9	15
Others:			
Totals:	28	18	46

This section closes with a breakdown by agency of current fire management staffing methods. The operation of lookouts varies from year-to-year based primarily on the estimated and/or actual fire danger potential in conjunction with a given agency's fire plan guidelines and budget allowance. These staffing methods are:

Seasonal: Fire agency employee operates lookout.

Contract: Outside party contracts to operate lookout.

Volunteer: Unpaid individual operates tower.

Emergency: Lookout operation during extreme fire danger.

O.O.S.: Facility out-of-service.

Only a few lookout operators have ever achieved permanent positions with a given agency; most work from June to October with extensions (either way) based on actual fire season conditions. Also, a few lookouts have been financed under various older American employment programs. Space limitations preclude listing these special staffing levels separately; consequently, these figures have been entered under the seasonal heading. At any rate, only a few sites have been so financed. Two other comments. First, some volunteers do receive operational expense allowances but no salaries; and, secondly, emergency sites are generally occupied for very short periods by seasonal employees or volunteers.

Statistical Abstract

Forest-Fire Lookout Staffing

Method:	Seasonal	Contract	Volunteer	Emergency	O.O.S.	T
USFS:	60	29	13	31	55	188
NPS:	4				2	6
BLM:	1				2	3
BIA:	1					1
CDF:	70		2	1	5	78
DP&R:					1	1
County:	2		1		4	7
Private:	1				1	2
Totals:	139	29	16	32	71	286

During any given fire season, approximately 186 fire detection points may be in active service which translates into 100 sites which have fallen into permanent or near permanent disuse.

Presented on the next eight pages is a listing of the sites which contained fire detection buildings or trees on June 1st, 1986. A complete inventory of all California fire detection sites will be found at the back of this report.

Statistical Abstract

Occupied Site Distribution By Agency

ANGELES NATIONAL FOREST

Blue Ridge
Johnstone Peak
Mount Gleason
Mount Islip
Slide Mountain
South Mount Hawkins
Vetter Peak
Warm Springs Moutain

CLEVELAND NATIONAL FOREST

High Point
Hot Springs Mountain
Los Pinos
Lyons Peak
Margarita
Santiago Peak

ELDORADO NATIONAL FOREST

Alder Ridge
Armstrong Hill
Bald Mountain
Baltic Peak
Big Hill
Bunker Hill
Devil Peak
Iron Mountain
Leek Spring Hill
Lookout Mountain
Plummer Ridge
Robbs Peak
Slate Mountain

INYO NATIONAL FOREST

Bald Mountain
Kern Peak

KLAMATH NATIONAL FOREST

Ball Mountain
Blue Ridge
Bolivar-Craggy
Buckhorn Bally
Collins Creek Baldy
Eddy Gulch
English Peak
Happy Camp (Baldy) Mountain
Herd Peak
Lake Mountain
Lower Devils Point
Orr Mountain
Scott Bar Mountain
Slater Butte
Ukonom Mountain

Statistical Abstract

LASSEN NATIONAL FOREST

Antelope Peak
Blacks Ridge
Burney Mountain
Colby Mountain
Dow Butte
Dyer Mountain
Harvey Mountain
Hat Creek Rim
Lava Peak
McCarthy Point
Turner Mountain
West Prospect Peak

LOS PADRES NATIONAL FOREST

Black Mountain
Branch Mountain
Chews Ridge
Cone Peak
Cuyama Peak
Figueroa Mountain
Frazier Mountain
Hi Mountain
Junipero Serra Peak
La Cumbre Peak
McPherson Peak
Nordhoff Peak
Thorn Point
Topatopa Peak

MENDOCINO NATIONAL FOREST

Anthony Peak
Goat Mountain
High Glade
Hull Mountain
Indian Dick
Low Gap G.S.
Pine Mountain
Sanhedrin Mountain

MODOC NATIONAL FOREST

Blue Mountain
Blue Mountain (East Peak)
Happy Camp Mountain
Hayden Hill
Round Mountain
Sugar Hill
Timber Mountain

PLUMAS NATIONAL FOREST

Argentine Peak
Big Bar Mountain
Black Mountain
Brush Creek W. C.
Dixie Mountain
Kettle Rock
Mills Peak
Mount Hough
Pike County Peak
Pilot Peak
Red Hill
Red Rock
Smith Peak
Thompson Peak

Statistical Abstract

SAN BERNARDINO NATIONAL FOREST

Black Mountain
Butler Peak
Cajon Mountain
Keller Peak
Morton Peak
Red Hill
Red Mountain
Santa Rosa Peak
Strawberry Peak
Tahquitz Peak
Windy Cut G. S.

SEQUOIA NATIONAL FOREST

Baker Point
Bald Mountain
Breckenridge Mountain
Buck Rock
Delilah
Old Slate Mountain
Jordan Peak
Mule Peak
Oak Flat
Piute Peak
The Needles
Tobias Peak

SHASTA NATIONAL FOREST

Black Fox Mountain
Bonanza King
Girard Ridge
Grizzly Peak
Hirz Mountain
Hogback Mountain
Little Mt. Hoffman
Mount Bradley
Mount Eddy
Pilgrim Creek
Slate Mountain
Sugarloaf Mountain

SIERRA NATIONAL FOREST

Bald Mountain
Fence Meadow Peak
Goat Mountain
Miami Peak
Mount Tom
Musick Mountain
Shuteye Peak
Signal Peak

SIX RIVERS NATIONAL FOREST

Ammon Ridge G.S.
Blue Creek Mountain
Brush Mountain
Buck Mountain (Lems Ridge)
Camp-6 Mountain
Eightmile Peak
Grouse Mountain
High Plateau
Horse Ridge
Kettenpom
Orleans Mountain
Ship Mountain

Statistical Abstract

STANISLAUS NATIONAL FOREST

American Camp
Crandall Peak
Duckwall Mountain
Mount Elizabeth
North Mountain
Pilot Peak
Smith Peak
Trumbull Peak
Woods Ridge

TAHOE NATIONAL FOREST

Babbitt Peak
Calpine Mountain
Duncan Peak
Grouse Ridge
Helester Point
Martis Peak
Saddleback Mountain
Sardine Peak
Sierra Buttes
Verdi Peak

TOIYABE NATIONAL FOREST

Leviathan Peak

TRINITY NATIONAL FOREST

Black Rock Mountain
Hayfork Bally
Ironside Mountain
Knob Peak
Limedyke Mountain
Pettyjohn
Pickett Peak
Plummer Peak
Post Creek
Tomhead Mountain
Weaver Bally

LAKE TAHOE BASIN MANAGEMENT UNIT

Angora Ridge
Stateline
Zephyr Point

KINGS CANYON NATIONAL PARK

Park Ridge

LASSEN VOLCANIC NATIONAL PARK

Mount Harkness

LAVA BEDS NATIONAL MONUMENT

Schonchin Butte

SEQUOIA NATIONAL PARK

[Lookout Point G.S.] Milk Ranch Peak

YOSEMITE NATIONAL PARK

Crane Flat Henness Ridge

BUREAU OF INDIAN AFFAIRS

(Hoopa Valley Indian Reservation)

Big Hill

BUREAU OF LAND MANAGEMENT

(Susanville District)

Observation Peak Seven Lakes Mtn.

(Bakersfield District)

Caliente Mountain

FEDERAL FISH AND WILDLIFE SERVICE

(Sacramento National Wildlife Refuge)

Observation Tower

CALIFORNIA DEPARTMENT OF FORESTRY

Coast Region

Allen Peak
Berryessa Peak
Cahto Peak
Cold Springs Mount
Copernicus Peak
Eagle Rock
Grasshopper Peak
Iaqua Butte
Iron Peak
Mount Bielawski
Mount Jackson
Mount Konocti
Mount Saint Helena
Oak Ridge
Pacheco Peak
Pratt Mountain
Red Mountain
Schoolhouse Peak
Two Rock

Sierra Cascade Region

Bald Mountain
Banner Mountain
Bloomer Hill
Bully Choop
Digger Butte
Duzel Rock
Eagle Peak
Fredonyer Peak
Don Landon (Greens Peak)
Howell Mountain
Inskip Hill
Latour Butte
Likely Mountain
Manzanita
Oregon Peak
Paradise Craggy
Pattymocus
Pegleg
Platte Mountain
Quartz Hill
Sawmill Mountain
Shasta-Bear Mtn.
Siskiyou-Bear Mtn.
Soldier Mountain
South Fork
Sunset Hill
Tuscan Butte
Vina
Wolf Creek Mountain

CALIFORNIA DEPARTMENT OF FORESTRY

Central Region

Basalt
Bear Mountain [Fresno]
Black Mountain
Blue Mountain
Blue Ridge
Calandra Mountain
Call Mountain
Chalone Peak
Cottonwood
Deadwood Peak
Fowler Peak (Bear Mountain)
Green Mountain
Mount Danaher
Mount Oso
Mount Zion
Penon Blanco
Pilot Peak
Pine Hill
Red Top
Rushing Mountain
Shadequarter Mtn.
Sid Ormsbee
Sierra Vista
Smith Mountain
Valley Springs
Williams Peak

Southern Region

Boucher Hill
Mount Woodson
Rocky Butte
Red Mountain

CALIFORNIA DEPARTMENT OF PARKS & RECREATION

(Mount Diablo State Park)

Mount Diablo Summit Building

Statistical Abstract

KERN COUNTY

Annette Peak

Tollgate Mountain

LOS ANGELES COUNTY

San Rafael

MARIN COUNTY

Mount Barnabe (Dixon)

Mount Tamalpias

ORANGE COUNTY

Bolero

VENTURA COUNTY

South Mountain

PRIVATE ASSOCIATION

(Pole Mountain Lookout Association)

Pole Mountain

Private Residence

Manker (Red Hill)

Windy Knob

SOUTHERN PACIFIC RAILROAD COMPANY

Red Mountain (Signal Peak)

Epilogue

*"With the development of highly efficient radios and modern aircraft, the overall forest fire detection dimension has changed considerably. Telephone lines from lookout towers to ranger stations are rapidly being dismantled to save the high maintenance cost involved. Many units have completely converted to radio communication and have developed a network which ties into commercial telephone communications. Recent studies of fire lookout effectiveness have resulted in the discontinuation of towermanning at many stations. Frequently this has resulted in vandalism at lookout towers and service buildings and residences. This in turn has brought about the dismantling of lookout stations entirely at many points."**

*"Forest Fire Detection" by Eliot W. Zimmerman; USDA. 1969

Epilogue

By using this report's proposed historic significance evaluation methodology as a basis, lookouts could be nominated to the National Register of Historic Places on an individual, piecemeal basis as an historic site or building. However, because lookouts do possess the attributes of an historic district coupled with the fact that they constitute a finite and dwindling thematic group, it may be more logical and expedient to make a thematic, discontiguous district nomination. In essence, a collective nomination could be presented based on the context of this report in conjunction with the guidelines of the National Historic Preservation Act of 1966, as amended.

In application, each evaluated and approved lookout site would encompass a circular area of from 1/2 to 1 mile diameter radiating from the fire detection facility's center. Grouped together, these individual sites would thus constitute the sum total of a discontiguous district. The final product would be the establishment of isolated "islands-of-time" whereby present and future generations are assured of experiencing, first-hand, the early days of fire lookout history.[1]

Some efforts have already been expended to protect isolated lookout buildings but more can and should be done. Those sites designated for historic preservation which still serve as an active detection point would benefit from the addition of restoration and maintenance funding. Inactive lookouts which are successfully included in the listing could provided supplementary detection. Either way, fire management would gain the benefit of having a permanently maintained fixed point fire detection system, even if it only served as a backup to other technology.[2] However, action must not be delayed.

Since the beginning of this research, an air of urgency has permeated as buildings were being destroyed before they could be visited, let alone properly recorded. In point-of-fact, upwards of two dozen structures have been damaged or destroyed during the past five years. Within the last two years, over six towers have disappeared and another three have been damaged. While such events may be understandable when wrought by natural causes and difficult to control when due to vandals, in far too many cases the loss came about as a result of management decisions to remove a so-called "attractive nuisance." The remaining lookouts

are deserving of far better treatment.

Perhaps it is because of their remoteness, or maybe it is their seemingly defiant stand against the harsh elements that attracts us. Then again, it may be that lookout towers, which once stood on the cutting edge of man's progress towards taming the wilds, now represent a frontier past that many of us long to return to. Few they are, who don't treasure the chance to visit some off-the-beaten-path lookout. Oh sure they may forget the lookout's name, and perhaps their memory will grow fuzzy on what route they took to get there, but one thing is sure, a lifetime impression will be made about that little building perched on top of that big mountain way out in the sticks so all alone.

Often, visitors seem a bit fearful, if not downright scared-to-death, about the prospect of standing out on the catwalk. Yet few towers exceed 30', and fewer still reach to 60'. One rarely stops to think how puny these towers really are. Consider how dwarfed they'd look if placed in some city square. Consider also that the square footage of an average live-in observatory constitutes the sum total of one room of a standard tract house. True, when lookouts are relocated to fairgrounds and such, more people have a chance to view them. But something is lost; like penned up bears or caged eagles, lookouts seem to lose their spirit... their vitality... that is theirs alone when left in their own environs.

Far sadder, though, is the premature destruction and callous disregard that continues unabated. Illustrative, but by no means the only, are the cases within the recent past. In the fall of 1984, the South Mount Hawkins timber tower was under attack, a tractor poised for the kill, when (by accident) the Forest Archaeologist found out and narrowly succeeded in putting a stop to the project. Not so fortunate was the Cuyamaca lookout, it was scrapped in August of last year. Gone too is the steel tower at Gilman, torn down the one at Little Mountain, only their "feet" remain to tell they were once there. In October of 1985 the Crandall Peak lookout was stripped and prepared for burning, just in the nick-of-time the Forest Historian learned of the situation and forestalled the planned drip-torch party.[3]

Because of the widely circulated myth that buildings can be freely disposed of before their fiftieth birthday, many a forestry personnel has joined what detractors term the

Epilogue

"Fortynine Club," because of their propensity to quickly tear buildings down, just before that fateful year. By virtue of its numerous holdings, the Forest Service receives that unsavory epitaph more often than any other agency, yet there is no governmental entity which can claim a clean record.[4]

Whether it is the filing of a "negative declaration," blaming it on OSHA, or falling back on the ever popular "attractive nuisance" phrase, a repeated and continuing drive is on to dispose of, rather than care for, our historic past. Benign neglect is just as damaging and may, in fact, lead to greater liability. And of course, "we all know that the budget doesn't provide for the maintenance of out-of-service lookouts." The net effect has been the irretrievable loss of an important aspect of fire control history in California. With the fiftieth anniversary of the great CCC program already behind us a crisis situation is unfolding for the towers.

This paper has, of necessity, touched on only the highlights of our fire detection history, with the major focus being on lookout architectural history. But of equal interest, and what will ultimately bring this history to life, are the people... both now and long since gone... who have worked quietly, deligently, and dedicatedly to watch and protect our forests, our range, and even our lives. In commenting on why they do it, many a poet has waxed eloquent and many a lookout penned more profusely but Miss Hallie Daggett, the first woman lookout in the Nation (at Eddy Gulch in the Klamath National Forest), stated it all, over 60 years ago... said she:

> *...My interest is kept up by the feeling of doing something for my country-- for the protection and conservation or these great forests is truely a pressing need. To women who love the ballroom and the glitter of city life, this work would never appeal, but to me it is work more than useful-- it is a grand and glorious vocation-outing, for the very lifeblood of these great foliated mountains surges through my veins. I like it; I love it! And that's why I'm here.*[5]

Let us pay tribute to our lookouts now, before they to go by way of the steam train and silver coins.

Fixed Point Fire Detection

"Now that the 'urge' is on to replace all buildings on the National Forests with a 1935 model equipped with gold plated door knobs, porcelain baths and automatic snow removers, would it not be well to take a little time out and see if in the long run it would not be a sensible plan to preserve for the benefit of future generations (including Forest Officers) a few of the old early-day Ranger Stations, Guard Stations and Lookout buildings?

*On nearly every Forest are some old station buildings that should be preserved. Some of them are long since abandoned or soon will be. Why not preserve a few of the most historical so that the 6-hour-per-day, 5-day-per-week Forest Officer of the future can see how his horseback riding, shovel-wielding predecessor of 1900 to 1915 actually lived?"**

*Louis Barrett- California Ranger; Forest Service, Region 5, Vol. 6, No. 10. February 1, 1935.

Appendix 1

On this and the next two pages are the assigned index numbers of drawings that were (many still are) in the USFS Region 5 engineering files. Not all initials have been identified the others are:

J.C.B = John C. Beebee

N.K.B. = Norman K. Blanchard

J.J.B. = John J. Byrne

A.P.D. = Anthony P. Dean

L.O.E. = L. O. Ebbets

E.R.H. = E. R. Huber

K.B.J. = K. B. Johnson

H. K. = Harry Kevich

J.H.L. = John H. Lawrence

E.J.M. = Edward J. Maher

R. S. = Robert Sandusky

The L series plans are listed first. These are primarily tower designs or tower modifications. The dating is not sequential with the plan numbers. I presume that earlier drawings were simply tossed out. The oldest plan in the files is the L-2, coinciding with the erection of the only tower based on this design. The description abbreviations will be found in the lookout classification (Part 2). Designers are not always identified nor do all plans have an approving signature. Each drawing is assigned one number; therefore, when encountering numbers such as L-6-01&02 this indicates that two drawings still exist with different instructions or views of the building.

PLAN #	DESCRIPTION	DESIGNER	APPROVED	DATE
L-1-01	NETT 10-12'	J.H.L., N.W.M.		8-04-1935
L-2-01	H-B 12'	J.H.L., E.R.H	J.C.B.	4-30-1929
L-3-01	NOTT 20'	J.H.L., N.W.M.	J.C.B.	
L-4-01	H-B 20'	J.H.L.	J.C.B.	5-04-1938
L-4-02	H-B 20' connection plan only		J.J.B.	4-06-1949
L-5-01	BOTT 30'	J.H.L.	J.C.B.	1-10-1938

Appendix 1

PLAN #	DESCRIPTION	DESIGNER	APPROVED	DATE
L-6-01&2	BETT 30'	J.H.L.	J.C.B.	1-14-1938
L-7-01	BETT 20'	J.H.L.	J.C.B.	1-06-1937
L-7-02	BETT 20'	J.H.L., E.R.K., E.R.H.	J.C.B.	1-06-1937
L-8-01	K-B 30'	J.H.L	J.C.B.	12-28-1937
L-9-01	K-B 13'	J.H.L., E.R.H., N.W.M.	J.C.B.	9-25-1936
L-10-01	AM steel tower. Cab details.		Drawing not located.	
L-11-01	AM steel tower. Window Revisions.		Drawing not located.	
L-12-01	AM steel tower. Walkway details.		Drawing not located.	
L-13-02&03	Santiago revision,	H.L.	A.P.D.	8-28-1946
L-14-01	100' tower pier detail.		Drawing not located.	
L-15-01	Lightning protection, Bald Mtn.		Drawing not located.	
L-16-01	Delilah ladder safety rail & cage.		A.P.D.	11-20-1946
L-16	W.O. standard steel tower, non-R.O.		Drawing not located.	
L-18-01	10' steel tower for BC-3.		Drawing not located.	
L-19-01	20' steel tower for BC-3.		Drawing not located.	
L-20-01	Conc. foundation for W.O. C-L-104.		Drawing not located.	
L-21-01	Grill Base for Big Bar Mountain.		Drawing not located.	
L-22-01	Revised ladder for L-8.		Drawing not located.	
L-23-01	Counter balance for trap door.		Drawing not located.	
L-24-01	Refer to W.O. drawing C-25.		Drawing not located.	
L-25-01	Lightning protection for C-L-1.		Drawing not located.	
L-26-01	Aluminum tower 30' to 83'.		Drawing not located.	

Appendix 1

PLAN #		DESCRIPTION	DESIGNER	APPROVED	DATE
L-27-01	:	Aluminum cab. (Standard house).		Drawing not located.	
L-28-01	:	Steel cab. (Standard house).		Drawing not located.	
L-29-01	:	Delilah Mtn. Surplus- LeMoore A.F.B.		Drawing not located.	
L-30-01	:	R-5 steel lookout house. (CL-30).		Drawing not located.	
L-31-01	:	R-5 aluminum lookout house.		Drawing not located.	
L-32-01	:	All aluminum lookout house.		Drawing not located.	
L-33-01	:	Bald Mountain, Inyo N. F.		Drawing not located.	
L-34-01	:	Stairway replacement, Sunset Hill.		Drawing not located.	
L-35-01	:	1.5 story lookout tower.		Drawing not located.	
L-36-01	:	Slide Mtn. 11' metal enclosed base.		Drawing not located.	
L-37-01	:	Lookout, no information.		Drawing not located.	
L-38-01	:	Cab replacement, Cuymaca Peak.		Drawing not located.	

The following numbers are of complete buildings, or cabs, or towers and cabs. The first BC-10 plans were on a BOTT, the rest were for a K-B. The BC8, BC11, BC12, and BC13 were never built. I do not know if the BC7 or BC15 plans were used. The abbreviations will be found in the lookout classification except for these: M = metal, followed by width of cab in feet; likewise, W = wood, followed by cab width. Hex. = hexagonal, the BC11 to BC13 designs were all experimental hexagonal towers and cabs. BC8 and BC9 were for the Sierra Buttes.

PLAN #		DESCRIPTION	DESIGNER	APPROVED	DATE
BC-1-01	:	Glass porch, bedroom & kitchen.		Drawing not located.	
BC-1-A	:	One bedroom, kitchen.		Drawing not located.	

Appendix 1

PLAN #	DESCRIPTION	DESIGNER	APPROVED	DATE
BC-2-01 :	BC-2 was not listed nor found in R.O. office.			
BC-3-01-04 :	W14'	N.K.B., E.J.M.		1-10-1935
BC-3-05 :	W14'	N.K.B., E.J.M.		3-10-1937
BC-4-01-04 :	Windy Cut	E.J.M., L.A.D.		6-10-1936
BC-5-01-07 :	Red Hill	L.O.B.		1-10-1937
BC-6-01-03 :	Bunker Hill	K.B.J.	A.P.D.	6-20-1939
BC-7-01-02 :	Shelter.	K.B.J.	A.P.D.	10-30-1939
Do :	Note: BC-7 drawing says for "Mono" index says for Modoc.			
BC-8-01-02 :	M11'	K.B.J.		1-22-1940
BC-9-01-02 :	M9'	H.L.		7-01-1943
BC-10-01-3 :	La Cumbre	K.B.J., W.E.G.	A.P.D.	12-14-1944
BC-10-01-15:	La Cumbre		A.P.D.	6-27-1945
BC-11-01 :	Hex. K-brace	K.B.J.	A.P.D.	8-28-1946
BC-11-01-9 :	Hex. K-brace	K.B.J.	J.J.B.	11-10-1948
BC-12-01 :	Hex. K-brace	K.B.J.	A.P.D.	10-28-1946
BC-13-01 :	Hex. K-brace	K.B.J.	A.P.D.	11-30-1946
BC-14-01-4a:	from BC-3		J.J.B.	2-07-1949
BC-15-01 :	Cinder block (Strawberry Pk), J.H.L.		J.J.B.	12-08-1953
BC-16-01 :	M13' (plan # CL-3001 replaced this #)			11-12-1961
BC-17-01 :	Bald Mtn. Inyo N. F. Conc. bldg.		Drawing not located.	
BC-18-01 :	Floor plan & cabinets for BC-3.		Drawing not located.	
BC-19-01 :	Slide Mountain lookout tower.		Drawing not located.	

Appendix 1

PLAN #		DESCRIPTION	DESIGNER	APPROVED	DATE
C-L-104	:	M13'	N.H.O.		5-03-1951
C-L-104	:	M13'		A.P.D.	12- -1954
No #	:	Hull Mountain R.S.			7-08-1974
37L-10-L-1	:	Photovoltaic layout, R.S.			
No #	:	Antelope and Pilot, R.S.			no date
No #	:	Stateline	H.K.		1980
177	:	Dow Butte (stairs)			no date

Appendix 1

I did not obtain as much data on the California Department of Forestry plans, the numbers in their files are as follows:

PLAN #	DESCRIPTION	DATE
188	Mount Woodson	1968
259	unknown	
732-6A	lookout cab	no date
802-3	Vina F.F.S.	1950
809R,A,B,C	20' enclosed K-B type with Octagonal cab	1957
817	Vina F.F.S.	no date
819	catwalk addition for Mt. Bielawski	1955
820	Platte Mountain extension 45' AMC to 92'	1955
822	Oakridge lookout (80' AMC)	1957
823-24,	catwalk additions for AMC towers	no date
826	Mount Hamilton water storage tank	1960
827	Humbolt Cty. fairground flooring for relocated cab	1960
828-29	catwalk additions for AMC towers	no date
833	Vina F.F.S.	1962
837	Tuscan Butte, brick building	1965
1041	Region 5, Forest Service L-6 series	1945
1048	Mount Konocti X-B 43'	1976
1559	South Fork Mountain	1980

Appendix 2

This appendix presents some of the management and personnel concerns and ideas which were raised or observed during the course of this research. It is hoped that this information will assist agency planners in the maintenance and operation of fire lookouts. It is not intended to be the first and last word on what should or could be done. Some of the problems encountered were:

Occupational Health and Safety

Buildings

Failing catwalks, guard rails

Loose fitting doors and windows

Leaking, damaged roofs

Damaged lightning protection

Severe checking

Deteriorating foundations

Poor ventilation, no shades

Heavy vandalism

Failing stairways

Damaged guys

Poor or no painting

Dry rot, warping

Twisting of posts, etc.

Other structural damage

Termites

No fire escape

Equipment and Site

Leaking propane appliances

Rodent and insect infestation

Poor storage of papers, etc.

Unsanitary water storage

Poor or no signs

Poorly operating appliances

Poorly maintained roads, trails

Misc. equipment missing or damaged

Faulty plumbing

Fautly radios

Insufficient locks

Faulty wiring

No visitor information

Insufficient fire tools

Poor or no security

Firefinder out-of-line

Appendix 2

Personnel

Poor fire detection training	Low morale
Poor housekeeping	Uncontrolled pets
No public relations training	Unqualified

Most lookout operators interviewed were highly motivated and of above average intelligence. Indeed, considering fire detection's present situation, some very exemplary people are working in our lookouts today. A common complaint dealt with the lack of good communications between lookouts and fire management officers. In a similar vein, a high percentage of lookouts felt that dispatchers do not readily appreciate the difficulty attendant to the detection profession. Many fire management officers acknowledged the communication problem, pointing out that this and the general care of facilities and equipment has been tremendously hampered by dwindling budgets. In a number of instances, lookouts and fire management personnel have spent private funds to upgrade and replace various items.

Another chief complaint from the operators was the lack of detection training. Of special concern is the difficulty most lookouts have in estimating mileage out to a sighted smoke. (There are at least two lookout operators who claim to have formulated an easy means to determine mileage by using sophisticated hand calculators in conjunction with universal triangulation marks-- their reputations as good operators were confirmed by local agency personnel). Most operators endorsed the idea of annual "lookout schools." In 1985 the Klamath National Forest held its first such school after some twenty years. It met with a positive response.

Other concerns were: no road signs, no instructions on what to do with unruly, disorderly visitors, no visitor information handouts, no notification when agency personnel may be coming, difficulty in getting supplies, no refuse removal, questions over the safety of water from fire engines, concerns about microwave station radiation, concerns about asbestos tiles, desire for locked gates, need for visiting hour signs at site and on roads in, and questions regarding fire management terminology.

Appendix 2

Of course, the most heated debate of recent has been the introduction of contract lookouts. While many contractors are providing good service, there have been serious problems. The concern over contracting has not just come from displaced lookouts. Throughout the fire management structure questions have surfaced. For some, contracting is seen as a definite signal that top management is no longer committed to operating fire lookouts. Consequently, few management officers are willing to protest contracting or the general decline in lookouts. Still others have simply grown tired of fighting for the continuance of what is proving to be an increasing troublesome part of the fire control organization.

For those lookouts which are designated as historically significant, a few thoughts are offered. Far and above all other concerns is liability and vandalism. Only a legal opinion can answer the problem of liability completely but the first line of defense will be to minimize exposure due to building design defects, safety hazards, and natural conditions. Secondly, signing at sites must be installed and/or changed. (One common offender is the USFS sign which states: "This tower is maintained for the discovery of forest fires. You may climb it if you wish, but the Forest Service cannot assume any liability for accidents." The problems with this wording are obvious.) Finally, legislation must be enacted to curb runaway lawsuits.

To minimize vandalism, all sites should have locked gates which are closed during non-fire season periods. Burglar alarms are located at only two Forest Service lookouts, more should be installed. Rapid prosecution, stiff penalties or in lieu service-time to repair damaged sites must be brought to play. Finally, public education should be done at all levels, from programs at schools to presentations at various adult organizations. Even simple things like acid-etched interpretive signs will help garner support and respect for our rich forest-fire lookout history.

Facilities no longer used by fire management can provide other service. Public and private organizations involved in outdoor recreation, research and natural resource protection may be interested in using lookouts. Historical groups may be willing to help maintain sites. Various clubs from Ham radio operators or Scouting organizations to hunting groups may be interested in using and maintaining old lookouts. Renting and special use permits may also prove viable. As a

last resort, facility conversion to communication vaults, scientific instrument shelters or security monitoring stations may be workable.

Every effort should be pursued to relocate buildings slated for removal. The Plumas National Forest serves as an excellent model in how lookouts can find new life. In one example, fire crews dismantled, relocated and rebuilt a K-brace tower without the use of helicopters and at considerable savings over contracting the job out or building a new tower. In the other case, an ageing lookout was relocated to the Plumas County fairgrounds and restored through cooperative means. In the final analysis, there are numerous adaptive reuses which should insure that our lookouts will never again fall victim to the fate so many already have: burning at the site.

Glossary

Architectural Terms

Anchor Rod: steel rod to which a guy wire is attached. Anchor rods are secured to either expanding anchor plates or cross-plates which are buried in the ground. Under certain conditions, anchor rods may be connected to expanding rock anchors for attachment to rocks or stone walls. Guy wires are threaded through the eye on the anchor rod (and eye-bolt on tower) and secured to itself with a three-bolt clamp. Anchor rods are also known as threaded anchor rods.

Battered: to slant gradually inward from the base; specifically a lookout tower whose's walls are not perpendicular with the plane of the earth.

Cab: small house or cabin. Cabs sit directly on the ground or on top of towers. Cabs may be an integral part of the lookout tower or a separately designed unit.

Cap: stringer or runner (parallel to the plane of the earth) on top of timber towers upon which the cab rests.

Catwalk: narrow decking around a lookout cab. Most lookout catwalks are 3 to 4 feet wide bordered by 3 to 4 foot high rails.

Checking: the splitting or cracking of timber or paint.

Column: a slender, upright pillar or post of wood, stone or metal.

Corner post: a pillar or column located at the junction of a tower's outside walls or faces. Note: lookout towers can be triangular, square, or polygonal with a corresponding number of corner posts.

Glossary

Concrete Pier: footing for steel or wooden posts. Foundation for most lookout towers.

Cross-Brace: a wood or metal beam which extends from tower leg to tower leg. Crossbeam: used in wall construction.

Cupola: a small often squarish structure on top of a roof.

Dry Rot: the decay or crumbling of seasoned lumber into a dry powder caused by fungi.

Enclosed Tower: a tower which has been enclosed, generally with wood siding, for added storage or living space.

Gable the end of a ridged roof and the triangular shaped wall it covers.

Gable Roof: a roof with sloping sides whose end(s) are gabled. Few lookout cabs have gabled roofs.

Guy Wire: galvanized steel cable strung from towers and/or cabs to anchor rods. Generally utility grade guys with braided 7 wire strands are used. Guy wires are intended to protect lookouts from high winds. Also known as guy strand, guy line, guy cable, or guy.

Hip roof: a roof with sloping ends and sides. Most lookout cabs have hip roofs, the hip being brought to a single point over the apex of the tower.

H-brace: a nonbattered tower with galvanized steel I-beam columns for corner posts. The cross-bracing forms an "H" pattern. See photo in section 2.

K-brace: a battered galvanized steel angleiron tower, the cross-bracing forms a down-

ward facing "K" pattern. Photo in pt. 2.

Lattice: a framework of crossed wood or metal strips. Each tower face constitutes a lattice.

Lightning Protection: copper wires radiating from the center of the cab roof which run down the roof ridges and along the cab corners and tower posts to grounding rods. The resultant wire netting protects the building from lightning strikes. The use of lightning protection was standardized in the 1920's.

Mullion: a verticle steel bar between the floor and roof of a cab. Mullions help secure the roof to prevent twisting or failure during high winds.

Nonbattered: a wall or column which is perpendicular to the plane of the earth.

Open Tower: a lookout tower without siding, the framework is exposed.

Round Timber Tower: a tower with round (log or pole) legs. Generally these towers are rough-cut at or near the detection site.

Spaceframe: a structure rendered in three dimension. While lookout towers are spaceframes, the term is more commonly used to describe geodesic domes and the like.

Standard Woodframe: a building constructed with 2" X 4" studding. An industry standard for private homes and small businesses.

Timber Tower: a tower with milled 6" X 6" or larger wooden corner posts (legs). In most instances, the corner posts are either 8 or 10" square and 10 to 20' long.

Tower Leg: a verticle column designed to support a cab or platform. All corner posts are

tower legs but not all tower legs are corner posts. As an example, a square tower may have four, six, or eight legs but only four corner posts.

Truncated: a pyramid or conical shape whose apex or vertex has been cut off by a plane. Battered lookout towers are truncated so that a cab or platform may be placed on top.

X-brace: any tower whose cross-bracing forms an "X" pattern. As an example, Aermotor lookout towers incorporate X-bracing. See photo in section 2.

Fire Management Terms

Alidade: a pointer or straight edge attached to a firefinder which turns with it in a graduated circle for measuring the angle of a smoke from a lookout. Alidades may also be fitted in a hole in a map board and rotated along an azimuth ring for the same purpose. The graduation is in degrees as with a compass.

Azimuth Ring: a circular instrument graduated into 360 degrees and used to measure the angular distance along the horizon from a lookout's north point to any position east, south, or west. Can be integrally designed into a firefinder or a separate ring like a circular protractor.

Beaver Board: pressed woodpulp, used for map boards, made from pine and oak. First developed in the late 1800s in Beaver Falls, New York. Also see firefinder.

Blind Area: terrain within 15 mile radius of a lookout which is obstructed from view by ridges, mountains, etc.

Broadcast Fire: prescribed fire confined by natural

and/or man-made fuelbreaks.

Control Fire: older, and less technical term for prescribed fire which is falling out of general use.

Emergency Lookout: lookout site designated for use during critical fire danger only; e.g. during foehn type winds or after dry lightning storms.

Fire: fuel that is burning. See forest-fire.

Fire Detection: that part of the fire management organization charged with the responsibility of discovering and locating all natural and man caused fires which pose a threat to a natural resource. Fire detection is divided into two broad areas: fixed point and patrol. Fixed point involves the placement of stationary automated detectors, such as infrared cameras (highly experimental), or the hiring of lookout operators, lookout-fireman, and emergency lookouts. Patrols are carried on by either air or (rarely today) ground troops. Public cooperation is playing an increasing roll in the reporting of fires.

Firefinder: device used to locate a fire on a map. The most common firefinder is the Osborne firefinder, developed be W. B. Osborne in 1909. The Bosworth firefinder was also invented about this time by J. Bosworth. The Godwin firefinder was simply a mapboard with alidade, developed by Mendocino Forest Supervisor Dave Godwin. The low cost and ability to locally fabricate the instrument made the Godwin mapboard the perferred firefinder in California until the 1930s. Prior to 1910, modified surveyor's instruments, azimuth rings, and compasses were used.

Glossary

Fire Regime: the comparative yearly occurance and intensity of wildfire. The fire regimes are thus: frequent/severe; frequent/-moderate; infrequent/severe; and in-frequent/moderate. Much of California falls in the frequent/severe and fre-quent/moderate categories.

Fire Management: the administrative branch within a forestry agency responsible for fire use and control. Fire management is divided as follows:

Prevention Detection

Presuppression Suppression

Fuels Management

First-Report records kept by fire management which indicate which source was the first to report a fire. First reporting has long been the measuring stick for determining a lookout's performance; unfortunately, a bad operator can give a detection point a poor reputation. This has sometimes led fire management to close a lookout which may have proved of high value with a better qualified operator. First reporting for the California Na-tional Forests' lookouts has tradi-tionally averaged six per site per fire season.

Forest-Fire: any uncontained, freely spreading combustion that is consuming natural forest fuels which has not been prescribed by an authorized plan. Forest-fires are often labeled by the predominate type of fuel they are burning such as: grass, brush, or timber. Forest-fires are classified by behavior thusly: ground, surface, or crown, coupled with rate of spread.

Forest-Fire Lookout: Traditional term for fire lookouts.

Glossary

Forest Guard: early day term for seasonal employees hired by the Forest Service, usually to work as firefighters.

Forest Ranger: employee with the United States Forest Service, in charge of the smallest political division within the administration. Bernard Fernow is credited with first applying this title. The label has been appropriated by other agencies engaged in similar tasks and altered by the National Park Service to park ranger. In any case, rangers generally perform more administrative work today than their forbearers, who spent much more time in the field. The public often regards any individual employed by a forest conservation agency as a ranger.

Fuels Management: part of the fire management organization responsible for forest cover modification. Prescribed fire is a principle tool in this regard.

Light Burning: strickly: the burning of forest litter and small brush with the aim at clearing the forest floor. Over the years this term has been used to describe any intentionally set fire designed to clear land of unwanted brush and timber, improve grass production, or reduce fire hazard. Unfortunately, this use has engendered as much confusion as the practice has controversy.

Lightning Stool: any pedestal, stool, or chair with insulators on the leg ends. In most cases, lightning stools consist of small wooden pedestals with glass (telephone type) insulators screwed onto the legs. The practice apparently began during the 1920's and is intended to protect the lookout operator from spurious discharges during lightning activity. In

some instances, insulators were screwed onto the legs of the bed as well.

Lookout: 1) person engaged to watch for fire and smoke. 2) site designated for the detection of fire. 3) building designed to house, shelter, and/or elevate the lookout operator; also known as fire lookout, forest lookout, observation tower, ranger tower, or watch tower. With the decline in lookout use, the traditional fire management ranking system for detection sites is falling out of use; this system was:

Primary

Semi-primary

Secondary or lookout-fireman

Emergency

Project

Lookout-Fireman: firefighter engaged to watch for smokes between fire assignments. Preferred term over "secondary." See secondary lookout.

Lookout Operator: an individual engaged to watch for fire and/or smoke. By adding operator to their title, a clearer distinction can be drawn between the person and the site/building. Other labels are: tower-, station, or lookout-man or woman; fire watcher, and fire observer. Forest guards and forest rangers were the first lookouts who kept watch while on patrol. See also lookout-fireman and smoke-chaser.

Management Fire: prescribed fire. The use of this term varies with agency, some forestry personnel feel that the term "prescribed fire" is too technical to use with the

general public.

Mapboard: forestry agency map cut and glued (or laminated) to beaver board. In lookouts, the center of the map board corresponds to lookout's location.

Man Caused Fire: any fire accidentally, intentionally, or maliciously (arson) set by man or his activities.

Natural Caused Fire: any fire started by an act of Nature; e.g. lightning.

Pile Burning: after a logging sale, or timber and brush clearing project, the branches, sticks, etc. may be gathered into piles for burning.

Prescribed Fire: man or natural caused fire allowed to burn within strict, predetermined guidelines with the objective of vegetation conversion. Vegetation conversion effects watershed, wildlife, and wildfire. Prescribed fire can be as follows:

Broadcast Burning Swamper Burning

Pile Burning

Presuppression: part of the fire management organization involved with fire emergency planning.

Prevention: part of the fire management organization involved with public education and fire regulation enforcement.

Primary Lookout: lookout designated for annual use during fire season. Site is deemed of critical importance in the detection plan.

Profiling: the sketching of ridge lines, mountain tops, etc. as seen from the eye-level of a firefinder in order to determine the detection coverage of a lookout.

Glossary

Project Lookout: lookout site use for a specific number of season(s) to watch area of short-term high fire potential such as construction projects or extended slash disposal programs.

Rangefinder: device used to locate a fire on a map. Less popularly used than "firefinder," this term more accurately describes the fact that the instrument aids in locating the township, range and section number of a sighted smoke. It is the lookout operator that is charged with "finding" the fire.

Saint Elmo's Fire: traditionally refers to the appearance of a round flash of light seen around ships' masts, steeple tops, and tree tops. Caused by electricity, generally from thunderstorms, the bluish-white flash looks like fire. Saint Erasmus (Elmo) was considered the patron saint of Mediterranean sailors. In lookouts, it refers to the fiery glow and/or static discharges occasionally witnessed around and within fire detection facilities during lightning activity.

Secondary Lookout: site designated for lookout-fireman to provide coverage in areas blind to primary lookouts. The term secondary has not always met with approval as it gives a false impression that the detection provided was inferior to that from primary lookouts. In practice, lookout-firemen were considered a vital ingredient to the overall detection plan, providing coverage in areas deemed of critical fire hazard potential. The secondary nature refered more to the fact that the lookout-fireman's primary job was suppression and secondarily to provide detection. Because of the smaller seen area involved, it was considered a reasonable risk to allow

lookout-fireman to be away from their station. With the discontinuance of lookout-fireman, the term came to mean any detection point operated during moderate to high fire danger only. Today, the term is seldom used.

Seen Area: strickly: land in direct line-of-sight of the lookout. The seen area is confined to terrain within a 15 mile radius of the fire lookout; however, effective seen area can also include land just over ridge lines and etc. when it is determined that a smoke will rise into the direct seen area within the 15 minute from ignition allowance time.

Semi-Primary Lookout: a rarely used term, this designated primary lookout sites which were not operated during every fire season.

Site Number: number assigned to detection point for aviation bearings. The number is painted on roof of lookout or delineated on ground by white washed rocks. Practice began in California in 1919, numbers were reassigned in the 30s; maintenance of numbers is declining.

Slash Disposal: older term for pile burning.

Smoke-chaser: early day term for lookout-fireman, and forest guard. "Firechaser" alternately used.

Strip Burning: broadcast fire confined to narrow strips of land designed to create fuelbreaks.

Swamper Fire: upon ignition, fire is continuously fueled by hand or with machines.

Visibility Mapping: the shading in of seen areas on topograghic maps to determine the effective coverage of a lookout site.

Glossary

Wildfire: any non-prescribed, rapidly spreading fire in watershed, grass, brush, range, and/or timber lands. See forest-fire.

Wildland: any unsettled, uncultivated land. Lands bearing naturally occuring vegetation without the help of man. While intensive timber management may appear to be "cultivating" land, it should be understood that wildland does include forested areas.

Wildland Fire: fire burning in wildland areas.

Glossary

Abbreviations

ALDS: Automatic Lightning Detection System. ALDS went operational in 1982. Administered by the Bureau of Land Management, widely scattered ground detectors automatically send information on all lightning downstrikes via satellite to a central computer which triangulates the data thus pinpointing the locations.

AWS: Aircraft Warning Service. The AWS began in the late 1930s as a direct result of the National Defense Act of 1920. The objective was to provide civil defense along coastal areas. During World War Two the AWS operated throughout the United States and in all war theaters. Aircraft Warning Systems were radar stations which were being developed shortly before and during the War. The Aircraft Warning Service was discontinued in 1945.

BIA: Bureau of Indian Affairs. Established in 1824, the BIA was transfered to the Department of the Interior in 1846. Only relatively recently has the BIA begun building its own autonomous fire management organization.

BLM: Bureau of Land Management. Created in 1946 and heir to the last holdings of the GLO. The public domain in the continental United States was closed to homesteading in 1935. The BLM is within the Department of the Interior.

CCC: Civilan Conservation Corps. A number of Federal unemployment relief programs were established during the Great Depression. The CCC ran from 1933 to 1942, and was the single greatest means for the construction of lookouts. A

veritable alphabet soup worth's number of programs were developed to combat growing unemployment, most with varing degrees of success.

CDF: California Department of Forestry. CDF has long been a major component of the California State Department of Natural Resources (DNR). CDF traces its direct origin back to 1905 when a State Forester was first appointed. The first attempts to address wildland fire control began in 1885 with the creation of the first State Board of Forestry which was abolished in 1893. In 1927 the DNR was established and the Division of Forestry placed within it. The DNR is now known as The Resources Agency and CDF is now the Department of Forestry.

CWA: Civil Works Administration. Federal depression era relief program; a branch of FERA. See also CCC.

DNR: California State Department of Natural Resources. The DNR was set up in 1927 as a result of Governor Young's tremendous work in reorganizing California State government. The DNR was renamed the Department of Conservation in the 50s and is called The Resources Agency today.

ECW: Emergency Conservation Works Administration. Federal depression era relief program. See also CCC.

FERA: Federal Emergency Relief Administration. Federal depression era relief program. Grandparent to many other programs. See also CCC.

GLO: General Land Office. Established in 1812 to oversee the transfer of the public domain to private ownership. The GLO was placed within the newly created

Glossary

Department of the Interior in 1849. In 1946, the GLO was superseded by the BLM.

GOC: Ground Observer Corps. Formed about 1951 at the request of the Air Force with the cooperation of the Governors of California, Oregon, and Washington; the GOC picked up where the AWS left off. However, the GOC was less austere, involved fewer sites, and was not year-round. It was disbanded circa 1957.

IME: Increase Manning Experiment. Undertaken between 1955 and 1959, the IME study was intended to determine if increased budgeting for prevention, detection, and initial attack would lower overall suppression costs. While gaining conclusive evidence that it would, the rise of interregional fire suppression crews changed the application of the study.

NPS: National Park Service. The NPS was formed in 1916 and administers National Parks, National Monuments, and a number of historic sites and national recreation areas. The NPS is a part of the Department of the Interior.

NIRA: National Industrial Recovery Act. Federal depression era legislation; vehicle for relief program formations. See also CCC.

NRA: National Recovery Administration. Federal depression era program aimed at helping industry and commerce. See also CCC.

PWA: Public Works Administration. Federal depression era relief program. See also CCC.

RAWS: Remote Automatic Weather System. Implemented during the 70s, RAWS sends

information via satellite from remote automatically recording weather instruments to central receiving centers.

SERA: State Emergency Relief Adminstration. California unemployment relief program begun in 1931.

USDA: United States Department of Agriculture, established 1862 and raised to Cabinet level status in 1889.

USDI: United States Department of the Interior established 1849.

USFS: United States Forest Service. The USFS was created within the Department of Agriculture in 1905. A Division of Forestry had been formed in this Department in 1881, said Department having been established in 1862 and raised to Cabinet status in 1889.

WPA: Works Progress (Project) Administration. Federal depression era relief program. See CCC.

Notes

Prologue

1 An earlier paper entitled: "Preliminary Report-- Manned Fixed Point Fire Detection-- The Lookouts" was a limited circulation, progress report only. The word "manned" was dropped because of the significant role of women as lookouts. Additionally, automation systems (except ALDS and RAWS) are still highly experimental. A "working draft" of this report was distributed in early 1986 for review and comments resulting in several revisions and additions.

2 In regard to this detection plan, three sources are recommended for reading: 1) Planning, Constructing, and Operating Forest-Fire Lookout Systems In California by S.B. Show, E.I. Kotok, et al; 2) Principles of Forest-Fire Detection Of The National Forests Of Northern California by S.B. Show (pronounced "shall") and E.I. Kotok; and 3) "Improving Forest Fire Detection In California" by A.A. Brown in Journal of Forestry 33:923ff., 1935. Brown provides a good overview of the studies.

Introduction

1 Imperial, Sacramento, San Joaquin, San Francisco and large sections of Merced, Solano, Stanislaus and Yolo counties have low fire exposure. So too, do the eastern sections of Inyo, Mono and San Bernardino Counties.

2 I am indebted to Tom James, fire management, Groveland District, Stanislaus National Forest; and Tom Fulk, fire management, USDA, Forest Service, Region 5 Office, San Francisco, for information on fire management organization. See also Forest Fire Control and Use by A.A. Brown and K.P. Davis.

Historical Development

1 Brown and Davis, op. cit pg. 3. Fire In America: A Cultural History of Wildland and Rural Fire by Stephen Pyne, pgs. 3ff. In Western Civilizations by E.M. Burns, the author makes the comment that Heron of Alexandria had invented plans for a fire engine circa 300 B.C. pg. 171. FEMA representatives indicate that Japan has used fire lookouts since at least 1600 to protect their cities.

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2 Pyne, op. cit., pgs. 123ff, the author comments about problems with fire in Europe. The posting of sentries on city walls goes back to Old Testament times, though admittedly to guard against enemy attack, it is quite logical to assume that incidental fire detection was afforded, and needed, when field burning got out of hand- note ibid., pg. 127.

3 It is beyond the scope of the present discussion to get into the subject of "light-burning" and its related cousins of range burning; for those interested in the topic see ibid., pgs. 100ff (actually the whole book never strays far from this theme); and California Government and Forestry-II, during the Young and Rolph Administrations (referenced hereafter as Vol.2) by C. Raymond Clar, pgs. 275ff.

4 Fire regime is categorized as follows: frequent/severe, frequent/moderate, infrequent/severe, and infrequent/ moderate. Much of California falls in the frequent/ severe category. Pyne, op. cit., contrasts the American scene to that of Europe.

5 See A History Of American Democracy by J.D. Hicks, G.E. Mowry, and R.E. Burke, pg. 339.

6 On modifications see Sierra Nevada Natural History by T.I. Storer and R.L. Usinger pgs. 35ff; and California Government and Forestry, From Spanish Days to 1927 (referenced hereafter as Vol.1) by C. Raymond Clar, pgs. 3ff. On regulations see ibid, pgs. 84ff. A debate of sorts has surrounded the fact or myth of land burning by California's Indians. See Clar: Vol.1, op. cit., pgs. 7 ff., and Storer and Usinger, op. cit., pg. 35. In Handbook of the Indians of California by A.L. Kroeber, the author states that most Indians did burn, pg. 396, but then in his summary chapters, he makes no real reference to this practice, note specifically pgs. 814-817. Tribes of California by Stephen Powers, also offers no strong evidence for regular Indian burning, especially note pgs. 420-435; however, Powers was documenting things as they were, many years after the effects of whiteman's contact. In The California Indians by R.F. Heizer and M.A. Whipple, the authors do assert that the Pomo groups burned to improve natural crop

production, pg. 87. It is interesting to note that later on CDF and the USFS would have many confrontations with ranchers in the same area of the State because of the rancher's insistance to conduct range burning, Clar: Vol.1., op. cit., pgs. 100, 454-457.

7 Pyne, op. cit., pgs. 199ff; and Brown and Davis, op. cit., pgs. 20ff.

8 Pyne, op. cit., pgs. 182-190ff.; and The U.S. Forest Service: A History by H.K. Steen, pgs. 89ff. See also Forest and Range Policy by S.T. Dana and S.K. Fairfax, pg. 41.

9 Pyne, op. cit., pg. 184.

10 Breaking New Ground by Gifford Pinchot, pgs. 323ff. He lays claim to first using term "conservation" in connection with timber management. See also Steen, op. cit., pg. 96. Dana and Fairfax, op. cit., pgs. 45, 72. The National Park Service by W.C. Everhart, pgs. 10ff. For its broadest application see Power and Politics in America by L. Freedman pgs. 325-327.

11 Advocates of the Forest Service view themselves as conservationists and the Park Service proponents as "preservationists." In opposite fashion the Park Service supporters call themselves true conservationists and Forest Service backers as "utilitarian conservationists." While some peaceful periods have existed between the two agencies, there has been, and continues to be, a certain degree of antagonism. See Steen, op. cit., pgs. 117ff.

12 Hicks, et al, op. cit., pg. 339.

13 The size and affect of the conservationists was minimal until the 1890s, on the other hand the Mineral Land Act of 1866, the Desert Land Act of 1877 and (perhaps worst of all) the Timber and Stone Act of 1878 all ended up greasing the wheels of fraudulent land claims and near irretrievable lost of much valuable public lands. See Pinchot, op. cit., pgs. 80ff. Steen, op. cit., pg 24. And The Forest Service by M. Frome, pgs. 16ff.

14 A number of books have been written on the development of our National Park system see especially, Our National

Park Policy: A Critical History by J. Ise. As regards forest reservations see Pinchot, op. cit. pgs. 84ff. Dana and Fairfax, op. cit., pgs. 55ff. And Steen, op. cit.

15 Arguments have continued regarding whether or not Yosemite or Yellowstone should qualify as the beginning of a National Park program. For Yosemite see Nature and the American pgs. 148ff, and Yosemite: The Story of an Idea both by H. Huth. For Yellowstone, see National Parks: The American Experience by A. Runte, pgs. 33ff. Ise, op. cit., is the textbook for National Park history, he favors Yellowstone, pg. 13.

16 Records designating Wawona Point for detection use, only go back to 1930, "Monthy Superintendant Reports" 1930. Yosemite Research Library, Yosemite, California. Clark advocated clearing the floor of new growth, pointing out that the Indians had regularly burned the area over to keep the valley open, "Commissioners Report to the Governor for the Years 1893-94: Condition of the Floor of the Valley", letter of August 30, 1894 from Gaylen Clark, Guardian to the "honorable Board of Commissioners of the Yosemite Valley and Mariposa Big Tree Grove." Yosemite Research Library, Yosemite, California. Gaylen Clark's role in Yosemite can be found in Galen Clark by G. Sargent, regarding Indians, note pg. 81.

17 How the United States Cavalry Saved the National Parks by H.D. Hampton.

18 Actually, it would not be until after 1900, that a real distinction was drawn between forests and parks, Dana and Fairfax, op. cit., pgs. 44-47, 78. Runte, op. cit., makes a good case that parks could only be created out of "worthless" land, before the general public would endorse them, note pgs. 48-55. Pinchot, op. cit., pgs. 84ff, clearly points out the slow process of forest reserve creation. See also Steen, op. cit., pgs. 71ff, and Dana and Fairfax, op. cit., pgs. 66-67. In Pattern of American Government by H.M. Karlen, the author briefly touches on the impact of America's size and abundance, on the people, pgs. 12-19.

19 Steen, op. cit., pg. 26.

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20 Pyne, op. cit., pgs. 418-419.

21 Clar: Vol.1, op. cit., pg. 203 places it at 1878. Donner Pass: Southern Pacific's Sierra Crossing by J.R. Signor pushes it back to 1876, pgs. 48-49. And Snowplow: Clearing Mountain Rails by G.M. Best seems to put it closer to 1870, pg. 33.

22 Pyne, op. cit., pgs. 346ff. Dana and Fairfax, op. cit., pgs. 43-44.

23 Clar: Vol.1, op. cit., see especially pgs. 152-160.

24 Forest Fire Detection by E.W. Zimmerman, places logging company protection at 1900. Pyne, op. cit., places it before 1900, pgs. 219ff. Possibly the first forest-fire lookout by loggers started in the 1880s in Pennsylvania, see California Ranger Vol. 7, No. 25 pg. 5. No matter what the date see Pyne, op. cit., for positive effect of Cavalry and New York programs, pg. 225.

25 Ibid., pgs. 404ff.; Pinchott, op. cit., pg. 117. Forest and Water by A. Kinney. Kinney was a leading Southern California supporter of intensive fire control, in his book he even seemed to advocate the establishment of a fire lookout system supplied with heliographs, pg. 126. See Clar: Vol.1, op. cit., for his comments, pg. 166.

26 Steen, op. cit., pg. 71.

27 Ibid., pg. 71, on term ranger see pg. 40.

28 Ibid., pgs. 57, 71.

29 Leaves from a Forest Ranger's Diary by L.A. Barrett. Especially note pgs. 17, 27-29, although after the transfer, pg. 33 is a good illustration as well.

30 Steen, op. cit., pg. 57 indicates the degree of harmony between Pinchot and Roosevelt. Also see Pyne, op. cit., pg. 191.

31 Barrett, op. cit., pg. 37.

32 Trail Blazers by Coert duBois, pg. 76.

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33 Protection of Forests From Fire by H. S. Graves, pgs. 35ff. Show and Kotok: Planning..., op. cit., pg. 10.

34 On its National significance see Pyne, op. cit., pgs. 104-105, 265ff. On its State impact see Clar: Vol.1, op. cit., pgs. 371ff. For his own feelings, see duBois, op.cit., pgs. 79ff.

35 Systematic Fire Portection In The Northern California Forests by C. duBois pgs. 50-51.

36 Copy of the plans available on the Klamath National Forest, Yreka, California, cultural resources library.

37 Another point to consider is the difference in goals: Forest Service to manage trees versus the Park Service role to preserve scenic areas; indeed, based on Runte's thesis, see note 17 this section, there would be less need for protection in the Parks.

38 Clar: Vol.1, op. cit., pgs. 192-193, mentions the formation of a few protective organizations. Ibid. pgs. 202-204, calls attention to the Diamond Match Company which established a fire lookout on Bald Mountain (within the Lassen National Forest) in 1904, still an active site. For more information on the company see Matches, Flumes, and Rails by K. Stephens, note pg. 48, he places lookout at 1906. Clar: Vol.1, op. cit., details the new board and forester on pgs. 214ff.

39 Ibid., pg. 217.

40 Ibid., pgs. 309-312. Pyne, op. cit., discusses the Weeks Act on pgs. 349ff; and Steen, op. cit., pgs. 127ff.

41 Clar: Vol.1, op. cit., pgs. 191, 478-479. Mt Oso's building has been replaced but the Mt. Bielawski tower still stands.

42 Pyne, op. cit., pgs. 353-357.

43 California Ranger Vol 1, No. 9, March 3, 1917 states that 81 lookout structures had been put up within the "past year" by the U.S. Forest Service.

44 See Cover Type and Fire Control in the National Forests

of Northern California by S.B. Show and E.I. Kotok, pgs. 10-12, and Forest Fires In California, 1911-1920: An Analytical Study also by Show and Kotok. See also Show and Kotok, et al: Principles..., op. cit., pgs. 20-21.

45 The firsts studies were conducted under the aegis of duBois, "The History of the Development of the U.S. Forest Service Fire Control in California" (unpublished) by S.B. Show, pgs., 55-79. S.B. Show papers, Bancroft Library. The Determination of Hour Control For Adequate Fire Protection in the Major Cover Types of the California Pine Region by Show and Kotok, 1930, confirmed the need for a 15 minute discovery time limit, note pg. 11 in regard to the first mention of this time limit.

46 In particular, Show and Kotok: Principles..., op.cit. And Brown, op.cit.

47 Ibid. note pg. 931 on value of plan. Show: The History of the Development..., op. cit., pgs. 177-219. And, Regional Oral History Project, interviews of S.B. Show by A.R. Fry, pgs. 8, 56-59 add insight into the CCC planning. Both in S.B. Show papers, Bancroft Library, Berkeley, California.

48 United States Army In World War Two, The Western Hemisphere, Guarding The United States And Its Outposts by S. Conn, R.C. Engelman, and B. Fairchild, pgs. 17-23, 54, 61. The Army Air Forces In World War II, Vol. 6, Men and Planes by W.F. Craven and J.L. Cate, pgs. 98-115, note that the name "Ground Observer Corps" is used on pg. 98.

49 Actually distances were initially to be about six miles, see Letter to Chief of the Army Air Forces, Washington D.C. from C. W. Russell, Brigadier General, G.S.C., dated December 20, 1941. R.G. 18, Records of the Army Air Forces. Modern Military Headquarters Branch, Military Archives Division, National Archives, Washington D.C.

50 For an interesting account of the events of the Forest Service lookouts in Region 5 (California) see Sky Watchers of the Hinterlands by W. S. Brown.

51 A scare along the West Coast over Japanese fire balloons pre-empted further closures, see "California Region

Administrative Newsletter" (California Ranger) January 23, 1946, pg. 2. USDA, Forest Service, Region 5, Regional Office, San Francisco, cultural resources library. As a matter of fact at least two lookout sites had new facilities erected in 1943. "Clarke-McNary Section 2", Annual Reports, 1943. And, "Monthly Activity Reports" File #4, F3849:608-627. Forestry Records, Department of Natural Resources, California State Archives, Office of the Secretary of State, Sacramento. The Green Mountain building still serves as a lookout for CDF and is the best example left of the AWS cupola type lookout.

52 "California Region Administrative Digest" op. cit., February 15, 1950, pg. 1 establishes the beginning. Two retired Forest Service lookouts, Dorothy Wothe and Inez Robie, told the author of their own experiences with the GOC and placed the ending year as about 1958.

53 Clar: Vol.2, op. cit., pgs. 261-265.

54 Los Angeles County was facing the worst effects of the growing problem with suburbs expanding into wildland areas. The Forest Service was the only agency in the United States at this time which had a history of wildland fire control; even so, when the need arose for addressing the Southern California fire situation, CDF became an active partner with the Forest Service in trying to find the solutions see Pyne, op. cit., pgs. 388-389, 404-413, 440-449. Ibid. 295ff. describes the slow erosion of Forest Service preeminence in wildland fire control over the next two decades.

55 Show: The History of the Development..., op. cit., pgs. 174-175. Bancroft Library.

56 National Park Service Rustic Architecture: 1916-1942 by W.C. Tweed, L.E. Soulliere, and H.G. Law. See also Park and Recreation Structures, Part 1- Administration and Basic Facilities by A.H. Good. Congressional authorization for appropriations to construct Park Service fire lookouts did not come until 1931. Ise, op. cit., pg. 345.

57 The issue first cropped up in a letter sent to the Pacific Southwest Forest and Range Experiment Station

from the Angeles National Forest, circa 1938, during construction progress surveys, in which the responding party asked the Station for its comments on the development. (I have not discovered a response, as yet.) Forest Service, R.G. 95, Fire Control Files (to 1940). Records of the Region 5 Office, San Francisco. Federal Records Center, San Bruno, California.

58 USDA, Forest Service, Region 5, Regional Office, engineering files, San Francisco. Also see appendix 2.

59 Standard Lookout Structure Plans, 1938 prepared by T.W. Norgross, USDA, Forest Service. Copy on file with USDA, Forest Service, Region 5 Office, San Francisco, cultural resources library. The first all steel tower and cab went up in 1951 on Hayfork Bally (55' tall). High Point is based on this design and is 67', Delilah is a 67' X-brace tower. Author's field reports.

60 duBois: Systematic..., op. cit., endorses Aermotor pgs. 50-51. Show, Kotok, et al: Planning..., op. cit., places a 30' restriction on live-in towers pg. 23. The Aermotor name is not mentioned but it is their tower shown on pg. 26.

61 duBois: Systematic..., op. cit., pgs. 55-56.

62 Pyne, op. cit., pgs. 440-449.

63 Ibid. pgs. 380-381.

64 Some might argue that poor visibility could be over come with supplemental optics for the lookout operators.

65 Television cameras and infra red cameras have been experimented with by both the USFS and CDF but with little success. Satellite detection affords greater possibilities. Also see Brown and Davis, op. cit., pgs. 353-355.

66 In 1978 approximately 12,000 acres were burned, in 1984 roughly 120,000 acres. See also, Brown and Davis, op. cit., pgs. 558ff.

67 Millions of dollars in personal injury suits have been filed against California's National Parks and Forests.

Notes

Lookout Classification

1 See the glossary in reference to the use of this term. It should be understood that many in fire management today feel that no fire lookout is a primary detection source.

2 C. Raymond Clar, in correspondences with the author, stressed the fact that before the CCC era, state-level lookout construction was pretty much a "pass-the-hat" affair, indeed, so called "bootleg" projects were undertaken by unit rangers without the State Forester's authorization, as the only means to erect badly needed buildings. Clar reported that he experienced great difficulty (which he could clearly understand) in getting Sacramento to maintain these installations. The author is indepted to Mr. Clar for his assistance in this research. Of course, every fire agency has had to contend with budget constraints at one time or another, Show interviews by Fry, op. cit., pg. 57. Bancroft Library. The effects of geography can be found in Show, Kotok, et al: Planning..., op. cit., pgs. 15ff.

3 Ibid. pg 23, and duBois: Systematic..., op. cit., pgs. 49ff. Climate may be reflected in the use (or lack thereof) of the cupola design which does get very hot inside. However, more to the point, the spotting of fires is more urgent, for greater periods of time in the hot, dry climate of California than in northern regions, thus leading men like duBois to insist that the operator remain in direct-line-of-sight at all times. In public relations, the special designing of the lookout on Red Hill, adjacent to the San Bernardino National Forest, is an excellent example. Its design was in keeping with the landowners' request that the building must conform to existing architecture on the rest of their property.

4 The New Merriam-Webster Pocket Dictionary 1972.

5 The citation of Washington's home provides a segue into the fact that he was a surveyor in his early years. This leads to the subject of survey instruments which influenced the development of firefinders. As a matter of fact, a surveying instrument was used in the Red Mountain lookout. Property inventory records, Southern

Pacific Railroad Company, San Francisco, California. Of course I really can't prove that Washington ever took a survey reading of a smoke from his home. For more information on him see The Founding Fathers: George Washington: A Biography in His Own Words Vols. 1 and 2 edited by R.K. Andrist; vol.2 has good illustrations of Mount Vernon.

6 Oil industry: see California Ranger Vol. 6, No. 32, August 7, 1925; its description of the new 80' wooden lookout tower on Grass Valley Ridge, San Bernardino National Forest, stated it was constructed along the lines of "a typical oil derrick." For insight into its inspiration see The Little Giant of Signal Hill by W.A. Tompkins, note photo essay between pgs. 38 and 39. Mining: see Sierra Album by P.C. Johnson, pg. 40. C. De Ferrari in "The Big Gap Flume" Chispa Vol. 11, No. 3, pgs. 373-377, identifies the flume and offers good insight into its construction. Farming and ranching: Aermotor towers, Aermotor, formed in 1888, started marketing windmills as their first product line. Company records, Mueller Pump, Conway, Arkansas; and T. Lindsey Baker, The Panhandle-Plains Historical Museum, Canyon, Texas. Prehaps the first "portable" tower can be credited to the Romans, Great Ages of Man: Imperial Rome by M. Hadas, pg. 89. The first major tower construction project appears in Genesis, chapter 11.

7 Signal Peak, 1911, letter to David D. Bula from Robert E. Flynn, fire control officer, December 17, 1969. Sierra National Forest, Fresno, California, cultural resources library. A cupola type lookout still stands on Mount Eddy, in the Shasta-Trinity National Forest, erected prior to 1923, unconfirmed reports push it back as far as 1913. The first lookouts were on Claremont Peak, Plumas National Forest and Shuteye Peak, Sierra National Forest circa 1908, Barrett, op. cit., pgs. 36-37. Both buildings were small glassed in cabins. See letter from Flynn, op. cit., for additional Shuteye information, and "Forest Fire Control on the Sierra National Forest: Audie K. Wofford." Sierra National Forest, cultural resources library. Southern Pacific Railroad Company's Red Mountain lookout, was replaced by a stone building in 1909. Property inventory records, Southern Pacific Railroad Company, San Francisco. The next oldest building used as a lookout (after Red Mountain's first

wooden building) was the "marine exchange" building on Mount Tamalpais, built 1901. It was not used as a fire lookout until 1921, its original purpose was to keep track of ships approaching and entering San Francisco Bay. History and Summary of the Tamalpais Forest Fire District. See The Crookedest Railroad In The World by T. Wurm and A. Graves, pg. 35. for photograph of attractive hexagonal lookout. The CCCs replaced it with a stone tower and C3 cab.

8 duBois: Systematic..., op. cit., pgs. 56-59.

9 For the 10' cab see Early Day Experiences In The U. S. Forest Service by R.H. Abbey, pgs. 34-35. Lassen National Forest, Susanville, California, cultural resources library. For the 12' 8" cab, duBois: Systematic..., op. cit., pgs. 57-58. It is possible that the early lookouts on Shuteye and Claremont were the first prototypes.

10 Abbey, op. cit., pgs. 34-35.

11 Plans on file with the Klamath National Forest, Yreka, California, cultural resources library. It appears that the towers probably did not exceed 20'; nonbattered, enclosed or open.

12 duBois: Systematic..., op. cit., pg. 55.

13 See note 7, this section.

14 duBois: Systematic..., op. cit. pg 50.

15 Ibid. pgs. 50-58.

16 See note 11, this section.

17 Copy of plans on file with the Klamath National Forest, Yreka, California, cultural resources library.

18 Inference only, from photo and date regarding the San Dimas lookout said to have been built in 1923, Inspection Report On Lookout Towers In The Angeles National Forest (n.p.) by E.R. Huber and G.L. Reynolds. Angeles National Forest, Pasadena, California, cultural resources library.

19 Ibid. San Dimas tower had no bolts. Girard Ridge on Shasta-Trinity National Forest has bolts, it was erected 1930, Fire Control Files, op. cit., San Bruno, California.

20 Huber and Reynolds, op. cit., Mount Gleason lookout built 1927. L.A. County built several towers of this type, the earliest being at Castro Peak circa 1924, "Fiscal Year Reports, Los Angeles County Forestry Department" 1925-28, note cover page of 1926-27 report. Fire pamphlets. Forestry Library, Mulford Hall, Berkeley, California.

21 Huber and Reynolds, op. cit., regarding Sunset Peak lookout said to be built in 1927. It should be pointed out that the Keller peak tower is reported to have been erected in 1927 as well; the most recent K,X-B was in 1930 on Sawmill Peak, within the Lassen National Forest, Fire Control Files, op. cit., San Bruno. The bottom 10' section of these towers is of the K-brace design whereas the upper 10' section is of the X-brace design like the Aermotor towers. Huber and Reynolds, op. cit., and author's field reports. A closer connection may be with the Baker Manufacturing Company which was marketing 10' to 30' X-brace towers with what appear to be 8' to 10' cabs as early as 1922. Company catalogs. The Panhandle-Plains Historical Museum, Canyon, Texas. The K-brace design goes back at least as early as 1913, Iron Men and Copper Wires: A Cenntennial History of the Southern California Edison Company by W.A. Myers, pg. 110. Referring back to note 6 in this section, it should be pointed out that the demands for higher voltage transmission lines led to improved steel tower designs; therefore, power companys can be added to the list of influences on lookout architecture. The growth of the power industry escalated dramatically after 1900, see P.G.and E. of California by C.M. Coleman for history about one of the largest utilites in America.

22 L-201, built 1929 Chews Ridge, Los Padres National Forest. Region 5 engineering files, op. cit., and photo inventory files, Los Padres National Forest, Goleta, California, cultural resources library. L-401, first built on Oat Mountain, Sierra National Forest. Author's field reports and Fire Control Files, op. cit., San Bruno. L-801, Sugar Hill, Modoc National Forest, ibid.

and real property records, Modoc National Forest, Alturas, California.

23 Actually I do not know if Region 1 had access to the 4A design but they did have access to a descendant of this design, which they revised and presented to the Fire Control meeting of 1931 at Shasta, California. "Fire Control Meeting" minutes and papers, February 10-21, 1936, Spokane, Washington, pg. 24. Fire Library, USDA, Forest Service, Region 5 Office, San Francisco, California.

24 "Building and Construction: 1933 - 1941" file 2, F3849:232-233. Forestry Records, Division of Forestry, Department of Natural Resources. California State Archives, Office of the Secretary of State, Sacramento.

25 Ibid. Additional insight and assistance has been provided from CCC alumnus Don Hobart and Martin Bianco to whom I am deeply indepted.

26 Huber and Reynolds, op. cit., discuss mullions. Fire Control meeting in Spokane, op. cit., adopted R5's revisions, pg. 24. The oldest BC-301 plans in the Forest Service, Region 5 Office, op. cit., are dated 1935 but are entitled "1934 Standard Lookout Plan."

27 Ibid.

28 Norgross, op. cit.

29 Show, Kotok, et al: Planning..., op. cit., pg. 23.

30 Norgross, op. cit. Region 5's contribution to lookout designs is not specifically mentioned in the preface to this publication but Region 6 and 7 are. Since this is a tower construction manual and, in view of USFS, Region 5's disapproval of live-in towers over 30', it is only natural that the other Regions contributed more. I have been informed that Region 6 did build taller live-in type towers because of the terrain and timber cover.

31 The existing lookout on Green Mountain, in Mariposa County, has been identified as an Army Air Corps lookout built in 1943. I do not know when, from whom, or how long this design was used. There are 3 cupola styles and

three dwellings still standing in California. For the best evidence that these are AWS stations see photo file inventory, Los Padres National Forest, op. cit. and Brown, "Sky Watchers..." op. cit.

32 USDA, Forest Service, Region 5 engineering files, op.cit. And photo file inventory, Los Padres National Forest, op. cit. The lookout is La Cumbre.

33 "Photographic Facility Inventory File." Technical Services Section, California Department of Forestry, The Resources Agency, Sacramento. Berryessa Peak: 1948, Mt. Jackson: 1948, Sid Ormsbee: 1948, Chalone: 1952. The 1948 dates are pushed back one year in property records at the Technical Services Section. 1948 is probably the correct construction date, Clarke-McNary: Section 2. Division of Forestry, Department of Natural Resources. California State Archives, Office of the Secretary of State, Sacramento.

34 Based on the existence of Big Bar Mountain, a 55' tower erected in 1949. Property records, Plumas National Forest, Quincy, California. Author's field reports.

35 From interviews with USDA, Forest Service, Region 5 engineers and plans Forest Service, Region 5 engineering files, op. cit. Hayfork Bally was erected in 1951 and is an all steel 55' high lookout. Author's field reports.

36 Signal Peak, letter from Flynn, op. cit., it may be concrete block, see also Forest Service, Region 5 engineering files, op. cit..

37 Sunset Hill is apparently the first recipient, Color photos in "Photographic Facility Inventory File," op. cit. Date is 1970 in property records, Technical Services Section, Sacramento. In an interview with the author, Plesha pointed out that the small (8' X 8') cab on Likely Mountain's tower (built 1965) was the prototype. He persuaded CDF to try this scaled down version. Four years successful performance convinced the State to drop the increasingly more expensive 809R design for Plesha's.

38 USDA, Forest Service, Region 5 engineering files, op.cit.

Notes

39 Engineering files, Technical Services Section, California Department of Forestry, The Resources Agency, Sacramento.

40 Oil industry: see note 6, this section. Railroading: The short nonbattered towers initially used for the 4A are very similar in concept to steam train water tank towers, except that the later used heavier construction to support the greater weight of full water tanks. Another possible link is that many lookouts were positioned to keep watch on railraod lines (consider the Feather River Canyon in the Plumas National Forest and the Sacramento Canyon on the Shasta-Trinity National Forest), a few reports indicate that mainline and logging railroads built or funded some fire lookouts.

41 Only by viewing construction drawings will it become apparent that the large lower sections of tall observation only towers could support live-in cabs.

42 Norgross, op. cit.

43 It should be brought to the addition of the reader that 2" X 4" timbers were sometimes laminated together to make for taller towers. "Firechaser's Lookout House, U. S. Forest Service, D-6" see section on "specifications for material for lookout house" pg. 7. USDA, Forest Service, Region 6, Regional Office, Portland, cultural resources library. We have two laminated leg towers standing in California which incorporate four 2" X 8" timbers. Black Rock and Weaver Bally, Shasta-Trinity National Forest. Author's field reports.

46 Clar: Vol.2, op.cit., pgs. 189ff.

47 President Roosevelt's idea to create "conservation" work camps quite naturally would entail the services of the Forest Service, Hicks, Mowery, and Burke, op.cit., pg. 672. When the Washington staff was informed, the call went out to the Regional Foresters to meet in D.C. and draft plans for the work program. Show played a prominate role in these meetings. Show: The History of the Development..., op.cit., pgs. 177-219. Bancroft Library. On work accomplished, The Civilian Conservation Corps and The National Park Service, 1933 - 1942: An Administrative History by J.C. Paige. USDI, Park Service, Western Regionally Office, San Francisco, research

library. See also note 46, Part 1.

48 Show: The History of the Development..., op. cit., pgs. 177-219. The detection files from the Forest Service, Region 5 Office, clearly indicate that the California Forest and Range Experiment Station had control of everything from mapping and site designation to firefinders and building materials. Fire Control Files, op. cit., San Bruno.

49 Most of these plans are still available in the engineering files of the USDA, Forest Service, Region 5 Office, San Francisco.

50 USFS Region 5's, L-601 became CDF's 1041, as an example.

51 The fire detection files indicate that most lookout were built between 1933 and 1937. Fire Control Files, op. cit., San Bruno.

52 The 809R plan in the engineering files of the Technical Services Section, Sacramento, is dated 1958; therefore, lookouts based on this design which were erected prior to 1958 have been designated as 809.

53 The K,X-B design may have been a prototype for lookouts, but the K-B design was out by 1913, see note 21, this section. USDA, Forest Service, Region 3 Office has information which indicates that Aermotor did market towers to support live-in cabs; however, I do not know what they looked like. "Lookout Tower Inventory, Region 3" 1960. USDA, Forest Service, Region 3, Regional Office, Albuquerque, New Mexico, cultural resources library.

54 There may be planning numbers assigned for the lookouts in California but I have not found any, yet.

55 GND = Godwin, the Supervisor for the Mendocino National Forest was credited for having provided the material for the fire detection section in duBois' Systematic Protection..., bulletin, op.cit. duBois: Systematic..., pg.2

56 The 809R cab was also placed on a few NETTs. Also see note 52, this section.

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57 The designer of record on construction plans, copy on file with Klamath National Forest, Yreka, California, cultural resources library.

58 See note 31, this section.

59 "Building and Construction," op. cit., California State Archives.

60 Ibid.

61 Ibid., and interviews with Don Hobart.

62 See Lookouts of the Northwest by R. Kresek, pg. 338. This is basically an anecdotal and pictoral history; information regarding California is not accurate.

63 "P.B." Used by the Mendocino National Forest. Fire Control Records, op. cit., San Bruno. Very few portable buildings have ever been used.

64 Model numbers are from Mueller Pump Company, op. cit., and Region 3 inventory, op. cit.

Lookout Evaluation Methodology

1 Until the present study, no complete inventory of lookouts had been performed in California since the 30s.

2 Any mistakes in the following methodology are the sole responsibility of the author. Any credit for its success is shared with the following: California State Office of Historic Preservation, Sacramento, for the permission to review draft copies of the Caltrans Bridge Evaluation Form; and the services of: Pam Conners, Forest Historian, Stanislaus National Forest; Chuck James, Forest Archaeologist, Plumas National Forest; Dana Supernowicz, Forest Historian, Eldorado National Forest, Wally Woolfenden, Forest Archaeologist; Stanislaus National Forest; and Don Miller, former Regional Historian, USDA, Forest Service Region 5.

3 Several drafts were tested and it became apparent that unless the methodology is kept simple, the process breaks down because its too confusing and/or burdensome.

Notes

4 The (East) Prospect Peak lookout was listed in the National Register in 1978. Part of its significance was derived from its "first generation" lookout station design. It is interesting to note that there were no questions raised that lookouts, per se, are significant; in otherwords, this was taken for granted when the building was nominated and recorded. The "historic scene" was also determined as significant. Unfortunately, subsequent to the acceptance, the Park Service removed the building from the mountain in order to restore it and locate it in an "interpretive" setting, the work is still pending. Property files, USDI, Park Service, Western Region Office, San Francisco, California. The other lookout(s) in the Register are outside of California.

5 It must be reiterated that the first "conservationists" were in agreement that all fire must be excluded from the forests; therefore, fire control was a chief component of early American conservation. While it still is, much reconsideration for prescribed burning has opened up large areas of federal lands to periodic burning.

6 I believe that the withdrawing of the Yosemite land grant, deserves recognition as the first major turning point in American conservation.

7 There are new creature comforts in the lookouts but nothing has been invented to improve detection by lookout operators. There have been papers presented using computers to plan fixed point detection systems but the data is based on the 30s studies. See bibliography.

8 Radio for the Fireline: A History of Electronic Communication in the Forest Service, 1905 - 1975 G.C. Gray.

9 Fire lookouts still provide critical coverage throughout much of California but the trend is towards discontinuance. The major cause is not technology but the growing number of people who live within and adjacent to wildland areas. Brown and Davis, op.cit., pgs. 352-353, discusses using public assistance. There are those who feel that reliance on the general public to detect fires is too unreliable and potentially dangerous.

Notes

Also note, Show and Kotok: Principles..., op. cit., 12-15 pgs. It should be acknowledged that this bulletin was written well before the "invention" of the Forest Service's greatest public relation tool: Smokey the Bear. The friendly bruin may very well be the single greatest reason why lookouts have declined in numbers as "first reporting" competition with the general public has stiffened markedly since the advent of the bear's prevention campaign.

10 An additional purpose in having this rating category is to help segregate closely competing candidates.

11 For additional insight into landscape aesthetics see National Forest Landscape Management by W.R. Bacon and J. Dell.

12 Over the years, wilderness boundaries have expanded to include existing fire lookouts. It is unfortunate that wilderness advocates are often the first to demand that historical buildings be torn down because they "violate" the new wilderness area.

13 Many newspapers and several magazines ran articles about the solar towers.

14 All quotations from C.F.R. Title 36, Section 60.4

15 This methodology is design to identify the best candidates for the National Registry. Significant buildings that are in ruin should at least be targeted for "arrested decay" management.

16 The working draft of this report garnered many good suggestions. But in the interest of continuity between the draft and this edition few changes have been made. The chief complaint was the lack of examples. This criticism will be answered within a few months when a separate report will be issued on the results of the application of this evaluation methodology to the forest-fire lookouts of Region 5.

Notes

Statistical Abstract

1 The author would appreciate hearing from anyone having construction plans for the C1s and C2s. The identity of the C2 is confimed by Don Hobart. And by comparing the Fire Control Files, op.cit., San Bruno, to the information in the author's field reports.

2 "Building and Construction," op. cit., California State Archives. And, Fire Control Files, op. cit., San Bruno.

Epilog

1 How To Apply The National Register Criteria For Evaluation by Lynn Beebe, Carol Dubie, et al., draft copy 1982.

2 See appendix 2

3 Cases are documented in author's files.

4 Cases are documented about federal, state, and local agency actions, in author's files.

5 "A Novel Experiment: Hallie Comes to Eddy's Gulch" by R. Holsinger. Women in Forestry, Vol. 5, No. 2, summer 1983.

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General Inventory

The information in this listing is incomplete. All construction dates for currently standing fire lookouts should be viewed as within one to two years. Construction dates and building descriptions pertain to the last facility to occupy a given site. For example, the Mount Hough site (Plumas National Forest) saw its first lookout in 1912. In 1916 it was reconstructed and in 1934 it was replaced. The inventory listing will only list the 1934 date and building description. Space constraints precluded including all construction information.

The description designations are explained in the preceding classification section. An example follows:

Chews Ridge: 29/84 L2 C14R S/S

Translation: L2 type tower built in 1929, revised C14 cab design built 1984, both still standing. Keep in mind that TT = timber tower, W = wood, M = metal, S = steel, SHL = wood shelter, SPD = special design and * = building significantly modified after construction. Under status, S = standing, R = relocated, D = demolished and NB = not built. ? = listed information not varified. 1933P = lookout built prior to 1933. When known, tower types are followed by height in feet and cabs by width in feet unless the design type never varied, e.g. all C3 cabs are 14' X 14'.

It is believed that all existing lookouts have been discovered. However, there may be several trees standing which have escaped notice. All status information updated to June 1st, 1986. Several lookouts have since been removed.

ANGELES NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Blue Ridge	1929	NOX-B	M8'?	Stone	D/D/S	13 T3N R8W
Cucamonga Peak	No information					35 T2N R7W
Grass Mountain	1934	NOTT10'	C3		D/D	01 T6N R15W
Grassy Mountain	See Grass Mountain					
Johnstone Peak	1939	K-B30'	C3*		S/S	23 T1N R9W
Josephine Peak	1935	NOTT10'	C3		D/D	05 T2N R12W
Lookout Mountain	1920s	TT	4AR?		D/D	24 T2N R8W
Los Pinetos	1935	NOTT10'	C3		D/D	09 T3N R15W
Mendenhall Peak	1937	NOTT10'	C3		D/D	14 T3N R14W
Mount Baldy	No structures, see Lookout Mtn.					06 T2N R7W
Mount Gleason	1927	NOX-B60'	M8'	Stone	D/D/S	06 T3N R12W
Mount Islip	1927	NOX-B21'	M8'	Stone	D/D/S	17 T3N R9W
Mount Lukens	1933P	NOTT10'	4AR		D/D	09 T2N R13W
Mount San Antonio	See Mount Baldy					
Mount Wilson	1920s	150' Solar tower		SHL	S/D	29 T2N R11W
Pine Mountain	1935	NOTT10'	C3		D/D	26 T2N R10W
Pine Mountain #2	See Vetter Peak					
Reservoir Summit	1935	NOTT10'	C3		D/D	30 T7N R17W
San Dimas	See Johnstone Peak					
San Gabriel Peak (Mtn)	1935P	S10'	C3?		D/D	24 T2N R12W
Sawmill Peak	No information				D	29 T7N R15W
Sierra Pelona	34/36	K-B30'	C3		D/D	34 T6N R14W
Sister Elsie Peak	See Mount Lukens					

ANGELES NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Slide Mountain	1970	L-36,13'	C19		S/S	10 T6N R18W
South Mount Hawkins	1939	BOTT30'	C3		S/S	27 T3N R9W
Sunset Peak	27/29	K,X-B20'	4AR		D/D	35 T2N R8W
Vetter Peak	1935		C3		S	33 T3N R11W
Warm Springs Mountain	1934	H-B20'	C3		S/S	21 T6N R16W
West Liebre	1936	BETT20'	C3		D/D	05 T7N R17W
Whitaker Peak	1934	NOTT10'	C3		D/D	36 T6N R18W

CLEVELAND NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Black Mountain	1935	TT20'	C3		D/D	06 T12S R2E
Bolero	See Orange County					
Bottle Peak	See CDF					
El Carriso (G.S.)	No information					16 T6S R5W
Estelle Peak	1935	K-B30'	C3		R/D	05 T5S R5W
High Point	1965	K-B67'	C16		S/S	25 T9S R1E
Hot Springs Mountain	28/34	NOTT23'	C3		S/S	17 T10S R4E
Los Pinos	1964	K-B30'	C16		S/S	33 T16S R4E
Lyons Peak	1964	K-B40'	C16		S/S	10 T17S R2E
Margarita Peak	See Santa Margarita					
Miller Mountain	1930s	Emergency shelter			NB	10 T8S R5W
Monument Peak	No information				D	01 T15S R5E
North Elsinore	1930s	Emergency shelter			NB	T6S R5W
Palomar Mountain	See High Point					
Saddleback Mountain	See Santiago Peak					
San Juan (G.S.)	No information					33 T6S R6W
San Juan Hill	1930s	Emergency shelter			D	09 T3S R8W
Santa Margarita	1965	K-B30'	C16		S/S	27 T8S R5W
Santiago Peak	64&51	35'H-B type w/ C10*			S/S	29 T5S R6W
Shriners' Lodge	1928	Platform and tree			D	T15S R5E
Sierra Point (Peak)	1930	Emergency shelter			D	06 T4S R7W
Silverado Peak	1936	TT10'	C3		D/D	
Vallecito Point	See Shriner's lodge					

ELDORADO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Alder Ridge	1937	AM60'	M7'	C2	S/S/S	05 T10N R15E
Armstrong Hill	1937	AM80'	M7'	C2	S/S/S	13 T8N R4E
Bald Mountain	59/36	K-B30'	CL10	C2	S/S/R	12 T12N R11E
Baltic Peak	1931	AM80'	M7'	C1?	S/S/S	26 T10N R13E
Big Hill	1935	H-B20'	C3		S/S	33 T12N R14E
Bunker Hill	41-5/40	C6	C3		S/S	23 T14N R14E
Devil Peak	UK	Tree		UK	S/D	20 T13N R13E
Hotchkiss Hill	No infomation				D	12 T12N R11E
Iron Mountain	UK/35	Tree		C2	S/D	19 T10N R15E
Jakeys Hill (Jake's)	1935	H-B20'	C3		R/D	18 T13N R11E
Leeks Springs Hill	1961	K-B30'	C16		S/S	14 T9N R15E
Lookout Mountain	1935	H-B20'	C3		S/S	18 T12N R13E
Lynchburg Hill	No information				D	10 T13N R12E
Mount Danaher	See CDF					
Nevada Point Ridge	See Devil Peak and Wallace Peak					
Old Iron Mountain	UK	Tree		UK	D/D	23 T10N R14E
Plummer Ridge	1935			C2	S	20 T9N R14E
Plummer Ridge	UK	Tree		UK	D/D	13 T9N R14E
Robbs Peak	1937	BLK8'	C3		S/S	34 T13N R14E
Round Mountain	See CDF					
Saddle Mountain	No information				D	36 T12N R12E
Sand Mountain	No information				D	20 T12N R12E
Slate Mountain (#1)	No information				D	06 T11N R13E

ELDORADO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Slate Mountain (#2)	1935	H-B20"	C3		S/S	06 T11N R13E
Spanish Hill	No information				D	01 T11N R10E
Union Hill	No information				D	32 T11N R13E
Wallace Peak	1950s			R1M	R	19 T14N R14E

INYO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Bald Mountain	1940s	Log cabin			S	08 T2S R38E
Bald Mountain	1963		C17	L-33	S/S	08 T2S R38E
Kern Peak	1930s?	Platform			S	03 T19S R34E

KLAMATH NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Bald Mountain	See Collins Creek Baldy					
Baldy Mtn (Happy Camp)	1938	BETT10'	C3		S/S	11 T16N R6E
Ball Mountain	1937	BETT30'	C3		S/S	25 T46N R3W
Bear Mountain	No information					
Bear Wallow Peak	No information				D	28 T42N R11W
Blue Ridge	1934	AM80'	M7'	C2	S/S/S	11 T39N R12W
Bolivar-Craggy	1960	BLK9'	CL10		S/S	33 T40N R8W
Buckhorn Bally	1933	BETT13'	R1		S/S	17 T47N R8W
Buckhorn Mountain	1940P	TT12'	C3?	SPD	NB/D	
Bullion Mountain	1915	Tree		UK	D/D	02 T47N R8W
Cecil Point	34/54	TT10'	C3	R1M	D/D/R	17 T37N R11W
China Peak	1937	TT20'	C3		D/D	18 T46N R12W
Collins Creek Baldy	80/34	BEWF20'	C3		S/S	02 T45N R10W
Condrey Mountain	No information				D/D/D	11 T47N R10W
Craggy Peak	1920s?		UK		D	09 T39N R8W
Deadwood Peak (Baldy)	1934	TT10'	C3		D/D	07 T45N R8W
Denny Point	1961		W6'	UK	D	31 T42N R8W
Doe Peak	No information				D	12 T41S R1W
Dry Lake Mountain	1925	TT6'	UK		D/D	19 T47N R9W
Dutchman's Peak	See Rogue River USFS					
Eagle Peak		Tree		UK	D/D	32 T39N R8W
Eagle Rock	12/30s	Tree/TT	UK		D/D	32 T47N R3W
Eddy Gulch (#1)	1917		UK		D	15 T39N R11W

KLAMATH NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Eddy Gulch (#2)	1958	K-B20'	CL10		S/S	15 T39N R11W
English Peak	1960		W8'		S	15 T41N R12W
English Peak Cabin	1890s	Log residence for above			S	16 T41N R12W
Fool's Paradise	See Paradise Craggy					
Garner Mountain	1930s	Emergency site			NB	12 T43N R1E
Gazelle Mountain	1933	TT20'	R1		D/D	08 T41N R7W
Harrington	No information				D	
Herd Peak	1933		R1		S	30 T44N R3W
Hungry Creek Peak	1937	TT20'	C3		D/D	24 T48N R8W
Lake Mountain	17?/33	ROCK8'	R1		S/S	17 T45N R11W
Lakeview	1937	TT20'	C3		D/D	06 T47N R4W
Lower Devils Point	1963	BLK8'	C16		S/R	35 T47N R12W
Marble Mountain (Rim)	UK	Platform			UK	22 T43N R12W
Marble Mountain Cabin	No information				UK	21 T43N R12W
Mary Blaine	1938		C3		D	32 T37N R12W
McGavin Peak	1911	Emergency site			NB	08 T47N R2W
Medicine Mountain	1934		C3		D	25 T13N R7E
Mount Ashland	See Rogue River USFS					
Mount Hebron	1930s	Water tower			D	32 T46N R1W
Offield Mountain	1933	TT18'	R1		D/D	23 T12N R6E
Orr Mountain	1934	K-B30'	C3		S/S	16 T44N R1W
Packers Peak	See Trinity USFS					
Paradise Craggy	1932		R1		D	28 T46N R6W

KLAMATH NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Pony Peak	1934	TT6'	C3		D/D	13 T14N R5E
Quartz Hill	See CDF					
Scott Bar Mountain	1934	BETT10'	C3		S/S	15 T44N R11W
Secret Springs Mtn.	1933P	Emergency site				30 T48N R2W
Slater Butte	1984	BEWF22'	C14R		S/S	13 T17N R7E
Ukonom Mountain	1978	BLK14'	C16		S/S	22 T14N R6E
Van Bremmer	1933	TT20'	R1		D/D	19 T44N R2E
Windy Peak	See Rogue River USFS					
Yellow Dog Peak	1940P	Emergency shelter			D	24 T41N R11W

LAKE TAHOE BASIN MANAGEMENT UNIT

Site	Const.	Tower	Cab	House	Status	Legal
Angora Ridge	35/31		C3	SPD	S/S	13 T12N R17E
Stateline	83/UK		KEV	TLR	S/S	19 T16N R18E
Zephyr Point	1932	NETT20'	R1		S/S	10 T13N R18E

LASSEN NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Antelope Peak	1977	SDY	SDY		S/S	36 T32N R9E
Backbone Ridge	1932			C1?	D	31 T33N R3E
Bald Mountain	See CDF					
Blacks Ridge	34/38	AM45'	M7'	C2	S/S/S	03 T34N R7E
Blacks Cabin Ridge	See Blacks Ridge					
Bogard Buttes	See West Bogard					
Bottle Hill	1934?	Emergency shelter			D	16 T25N R4E
Brokeoff Mountain	1924		4AR		D	20 T30N R4E
Bull Hill	1920s?	Tree			UK	33 T26N R4E
Burney Mountain	1963?	BLK10'	C16		S/S	15 T34N R3E
Cambellville	See CDF					
Colby Mountain	1934	K-B30'	C3		S/S	33 T27N R4E
Crater Peak	See Magee Peak					
Digger Butte	See CDF					
Dow Butte	1940	NETT9'	C3		S/S	10 T33N R10E
Dyer Mountain	1934	NETT15'	C3		S/S	36 T28N R8E
Elam Creek Point	1934?	Emergency shelter			UK	T27N R5E
Harvey Mountain	1934	AM60'	M7'	4A*	D/D/S	12 T33N R8E
Harvey Valley	1933	Guard Station?				01 T32N R8E
Hat Creek Rim	1934	K-B30'	C3		S/S	15 T34N R5E
Inskip (Paynes Creek)	See CDF					
Jack's Backbone	See Backbone Ridge					
Ladder Butte	1932		R1		D	16 T34N R6E

LASSEN NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Latour Butte	See CDF					
Lava Peak	1940s		W8'	TLR	S/R	07 T34N R10E
Lone Pine Point	See CDF					
Magee Peak	1920s?		4A		D	27 T33N R3E
McCarthy Point	1936			C2	S	19 T27N R3E
Mount Harkness	See Lassen Volcanic NPS					
Mount Lassen	1912		GDN		D	34 T31N R4E
Peg Leg Mountain	See CDF					
Platte Hill	See CDF					
Prospect Peak (East)	See Lassen Volcanic NPS					
Round Mountain	1930s	Emergency	shelter		NB	04 T27N R2E
Sawmill Peak	See CDF					
Rocky Knob	1934?	Emergency	shelter		UK	
Turner Mtn. (South)	1934	AM60'	M7	C3	S/S/S	10 T28N R3E
West Bogard Butte	1934?	Emergency	shelter		D	35 T32N R7E
West Prospect Peak	1935	NETT10'	C3		S/S	36 T32N R5E
West Soda Ridge	1934?	Emergency	shelter		D	T26N R6E
Windy Cut	1936			C4	D	25 T27N R3E

LOS PADRES NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Anderson	AWS		CU	AWS	D/D	21 T20S R3E
Avenales (Pine Ridge)	AWS		CU	AWS	D/D	34 T31S R16E
Bald Mountain	AWS		CU	AWS	D/D	08 T31S R14E
Bates Ridge	No information				D	29 T10N R28W
Big Pine	See West Big Pine					
Black Mountain	1964	BLK11'	C16		S/R	15 T29S R15E
Branch Mountain	1935	K-B30'	C3	AWS	S/S/S	31 T31S T18E
Caliente Mountain	1943		CU	AWS	S/S	16 T11N R27W
Camuesa Peak	1935	NOTT10'	C3		D/D	03 T5N R27W
Cerro Alto	1964	UK	C16		UK/R	07 T29S R12E
Chalk Peak	1916	Platform			D	28 T22S R5E
Chews Ridge	29/84	L-2	C14R		S/S	06 T19S R4E
Cobblestone Mountain	1933P	No information				14 T6N R19W
Cone Peak	1965		C16		S	02 T22S R4E
Cuyama Peak	1935	H-B20'	C3	AWS	S/S/S	25 T8N R24W
Double Cone	See Ventana Double Cone					
Figueroa Mountain	1965	BLK13'	C16		S/S	25 T8N R30W
Frazier Mountain	1934P	NETT11'	R1?		S/S	14 T8N R20W
Gaviota Peak?	No information				NB?	23 T5N R32W
Hi Mountain	1965	BLK10'	C16		S/S	01 T31S R14E
Junipero Serra Peak	1935	K-B30'	C3		S/S	34 T20S R5E
Knapp Lookout #1	1928P			SPD	D	
Knapp Lookout #2	1928P			SPD	D	

LOS PADRES NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
La Cumbre Peak	1945	K-B20'	C10		S/S	21 T5N R27W
Los Coches	AWS		CU	AWS	D/D	33 T11N R32W
Madulce Peak	1934	TT10'	C3		D/D	14 T7N R26W
Manzanita Peak	1934	BOTT20'	C3		D/D	31 T10N R30W
McKinley Mountain	AWS		CU	AWS	D/D	08 T7N R28W
McPherson Peak	1934		C3		S	06 T9N R27W
Miranda Pine Mountain	No information				D	10 T11N R30W
Mount Carmel	AWS		CU	AWS	D/D	07 T18S R2E
Mount Pinos	No information				D	06 T8N R21W
Mutau (Mataw)	1934	H-B?20'	C3		D/D	
Nordhoff	1940	H-B20'	C3		S/D	24 T5N R23W
Pinyon Peak (Pinon)	1937	K-B30'	C3		D/D	25 T20S R5E
Pinyon Peak	See CDF					
Plaskett Ridge	AWS				D	
Potrero Secco	AWS		CU	AWS	D/D	04 T6N R24W
Reyes Peak	1927P	TT	4AR		D/D	11 T6N R23W
Rincon Mountain (Peak)	1936	H-B20'	C3		D	05 T3N R24W
Salisbury Potrero	AWS		CU	AWS	R/R	36 T9N R27W
Santa Lucia Peak	See Junipero Serra Peak					
Santa Paula Peak	1930	NOTT10'	4AR		D/D	07 T4N R20W
Santa Ynez Peak	1934	K-B30'	C3		D/D	12 T5N R30W
South Mountain	See Ventura County					
Stanley Mountain	No information					33 T12N R32W

LOS PADRES NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Strawberry Peak	See Madulce Peak					
Three Peaks	1934	BETT8'	C3		D/D	15 T24S R6E
Thorn Peak	1938	H-B20'	C3	AWS	S/S/S	17 T6N R21W
Topa Topa Mountain	1938	H-B20'	C3	AWS	S/S/D	09 T5N R20W
Ventana Double Cone	1936		C3		D	11 T19S R2E
Ventana Peak	See Ventana Double Cone					
West Big Pine	1934	NOTT10'	C3		D/D	12 T7N R27W
Zaca Peak	1920s?	Site not improved?				15 T8N R30W

MENDOCINO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Anthony Peak	1935	BETT11'	C3		S/S	15 T23N R10W
Ball Mountain	1935	TT4'	C3		D/D	17 T24N R8W
Beaver Glade	1930s?	Guard Station			D	17 T24N R10W
Bidwell Point	See Elk Creek Butte					
Big Signal Peak	1962	BLK25'	C16		S/S	08 T19N R11W
Black Butte	1936P		UK		D	27 T22N R9W
Black Diamond	1935	K-B30'	C3		D/D	15 T18N R7W
Eagle Peak	1935	BETT18'	C3		D/D	22 T24N R7W
Elk Mountain	1933P	No other information				36 T17N R10W
Elk Creek Butte	1936			C2	D	09 T20N R6W
Flatiron	See Sheet Iron					
Franklin Place (Point)	1936P	Portable building			R	05 T25N R7W
Garrett Mountain	1935	BETT18'	C3		D	20 T17N R10W
Goat Mountain	1935	K-B30'	C3		S/S	01 T16N R8W
Hammerhorn Mountain	1923		4A?		D	22 T25N R10W
High Glade	1935	K-B30'	C3		S/S	25 T16N R9W
Hull Mountain	1974		SDY		S	11 T19N R10W
Hunter Point	1935	ROCK9'	C3		D/D	27 T16N R10W
Indian Dick	UK	Tree		UK	S/D	29 T24N R10W
Island	1930s	Guard Station			NB	T19N R10W
Little Doe Ridge	See Indian Dick					
Little Signal Peak	See Sanhedrin Mountain					
Long Point	1935	TT14'	C3		D/D	12 T21N R8W

MENDOCINO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Low Gap	1935	Guard Station		C2	S	02 T22N R10W
Osborn	1930s	Guard Station				30 T24N R10W
Oven Lid	No information				D	07 T25N R8W
Pacific Point (Ridge)	1935			C2	D	25 T16N R7W
Pine Mountain	1936			C2	S	32 T18N R10W
Pinnacle Rock	1923		4AR		D	17 T15N R8W
Poison Rock	1935	BETT20'	C3		D/D	25 T22N R11W
Potato Hill	1935	BETT20'	C3		D/D	06 T17N R8W
Red Mountain	1935	BETT20'	C3		D/D	23 T22N R7W
Sanhedrin Mountain	1933P	TT20'	W10'		D/D	15 T19N R11W
Sanhedrin Mountain	See also Big Signal Peak					
Sheet Iron Mountain	1935			C2	D	22 T19N R8W
Solomon	1933P	No other information				15 T25N R10W
Spruce Grove	1930s	Guard Station		C2	UK	22 T20N R10W
Sunset Gap	NB	Guard Station		C2	NB	03 T18N R11W
Tantrum Glade	UK	Guard Station		Log	UK	12 T24N R10W
Valley View	1935	TT14'	C3		D/D	07 T22N R7W
Wild Bill Ridge	No information					T16N R8W

MODOC NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Alturas Hill	1936P	Proposed shelter			NB	
Blue Mountain	30/65	K,X-B20'	C16		S/S	18 T46N R10E
Boyd Hill	1937	NETT10'	C3		D/D	04 T36N R8E
East Peak (Blue Mtn.)	1930s	Tree & Platforms			S	17 T46N R10E
Fox Mountain	1936	TT10'	C3		D/D	34 T40N R8E
Happy Camp Mountain	1950	BLK5'	C14		S/S	01 T41N R7E
Hayden Hill	1940	NETT10'	C3		S/S	31 T37N R10E
Likely Mountain	See CDF					
Lone Pine	1936P	Emergency shelter			NB	
Manzanita	See CDF					
Round Mountain	37/56	BLK9'	C14		S/S	01 T41N R4E
Sugar Hill	1931	K-B30'	4AR		S/S	26 T46N R14E
Sunflower Point	1938	TT10'	C3		NB	
Timber Mountain	1966	K-B30'	C16		S/S	29 T44N R6E
Warren Peak	1940	TT10'	C3		NB	22 T41N R15E
Widow Mountain	No information					05 T38N R6E

PLUMAS NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Argentine Rock	1937	NETT11'	C3		S/S	17 T24N R11E
Bald Eagle Mountain	61/64	Log45'	W10'	TLR	D/D/R	18 T24N R7E
Bear Ranch Hill	1936	TT8'	C3		D/D	13 T23N R5E
Ben Lomond	1915P		W10'?		D	21 T25N R6E
Big Bar Mountain	1949	K-B55'	C14		S/S	09 T22N R5E
Black Mountain	1936	NETT11'	C3		S/S	17 T26N R15E
Black Sage Mountain	See Black Mountain					
Brush Creek (W. C.)	1937	Tree/TT20'	C3		S/NB	07 T21N R6E
Camel Peak	1926		4AR?		D	32 T22N R8E
Campbell Peak	See CDF					
Chambers Peak		Emergency site			NB	05 T24N R6E
Claremont	1908		WC10'		D	02 T23N R9E
Dixie Mountain	1928	NETT10'	4AR		S/S	15 T24N R15E
Flea Mountain	1919	Tree			UK	24 T23N R4E
Kellogg Ridge	1957	TT8'?	W8'	TLR	D/D/R	19 T22N R7E
Kettle Rock	1953	BLK9'	C14		S/S	02 T26N R11E
Lexington Hill	1961	K-B20'	C16		R/R	18 T21N R9E
Magalia	See Sawmill Mountain					
Mills Peak	1934	NETT9'	C3		S/S	10 T21N R12E
Mount Elwell	1918?		4A?		D	01 T21N R11E
Mount Fillmore	1914		W10'		D	20 T23N R8E
Mount Hough	1934	NETT9'	C3		S/S	08 T25N R10E
Mount Ingalls	1936	NETT10'	C3		R/R	28 T25N R12E

PLUMAS NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Mount Pleasant	1933P	Site not improved				
Oregon Peak	See CDF					
Pike County Peak	1983	K-B20'	C16		S/S	28 T19N R7E
Pilot Peak	1977	SDY	SDY		S/S	09 T22N R10E
Poverty Hill	1933P	BOTT25'	Plat		D/D	33 T21N R9E
Radio Hill	1938		C3		D	13 T24N R9E
Red Hill	1934	K-B30'	C3		S/S	10 T25N R7E
Red Rock	1955	NETT11'	C14		S/S	11 T28N R11E
Sawmill Mountain	See CDF					
Seven Lakes (Sisters)	See BLM					
Smith Peak	1936	NETT9'	C3		S/S	09 T23N R13E
Spanish Peak	1934			C2	D	19 T24N R8E
Sunset Hill	See CDF					
Swayne Hill (G. S.)	1923	Tree		SHL	D/D	34 T22N R5E
Table Mountain	1920		W10'		D	15 T22N R8E
Thompson Hill (Peak)	1932	NETT9'	R1		S/S	30 T28N R13E
Three Lakes Point	1937		C3		NB	31 T25N R7E

SAN BERNARDINO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Asbestos	1930s	Emergency site			NB	27 T6S R5E
Arrowhead Lake	1928P	Tree			D	
Arrowhead Springs	1933?	Guard Station			S	11 T1N R4W
Barker Bench Point	1937				NB	30 T2S R1E
Barker Peak	See Barton Peak					
Barton Peak	1935	TT10'	C3		D/D	25 T3S R1E
Bertha Peak?	1930s	Emergency site			NB	05 T2N R1E
Big Bear	1930P	Tree No other information				
Black Mountain	1962	K-B20'	C16		S/S	15 T4S R2E
Blue Cut	See VerBrycks					
Blue Ridge	See Angeles USFS					
Butler Peak	1936		C3		S	17 T2N R1W
Cajon Mountain	1935	K-B30'	C3		S/S	08 T2N R5W
Cajon Summit	See CDF					
Cugamonga Peak	No information					35 T2N R7W
Day Canyon	1934	Guard Station		C2	D	17 T1N R6W
DeSienna	1930P	No other information			D	T1S R4W
Grass Valley Ridge	1928	BOTT70'	W8'		D/D	19 T2N R3W
Job's Peak	1939P	Emergency site			NB?	18 T2N R4W
Keller Peak	27/32	K,X-B20'	R1		S/S	01 T1N R2W
Little Mountain	See CDF					
Manker Lookout	See Red Hill					
Miller Canyon	1935	BOTT20'	W8'		D/D	21 T2S R2E

SAN BERNARDINO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Morton Peak	34/60	H-B20'	CL10		S/S	12 T1S R2W
Project Peak	1966			R1M	R	05 T2N R4W
Ranger Peak	1935	BOTT20'	W8'		D/D	06 T4S R2E
Red Hill	1938		C5	C5	S/S	04 T1S R7W
Red Mountain	1936	H-B20'	C3		S/S	23 T6S R1E
San Antonio Ridge	See Angeles USFS					
San Sevaine Point	1934	TT10'	C3		D/D	34 T2N R6W
Santa Rosa (Peak)	UK	Tree & log cabin			S/S	27 T7S R5E
Strawberry Peak	1933	K-B30'	R1*		S/S	30 T2N R3W
Strawberry Flat	See Grass Valley Ridge					
Sugarloaf	1934	AM60'	M7'	C2	NB	06 T1N R2E
Tahquitz Peak	1937	NETT9'	C3		S/S	09 T5S R3E
The Pinnacles	1937	Emergency site			NB	31 T3N R3W
Thomas Mountain	1935	AM60'	M7'	C2	D/D/D	28 T6S R3E
VerBrycks	1933P	TT	Plat.		D/D	13 T2N R6W
Vista Grande	1934?	BOTT20'	W8'		R	07 T4S R2E
Windy Knob	See Arrowhead Springs					
Yucaipa (Fire Tower)	1933?	No other information			NB	36 T1S R2W
Zanja Peak	1937	Emergency site			NB	23 T1S R2W

SEQUOIA NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Baker Ridge (Point)	50/43?	NOTT22'	C14	SPD	S/S/S	10 T24S R32E
Bald Mountain	1955	K-B30'	CL10		S/S	12 T22S R34E
Bear (Valley) Mountain	See CDF					
Blue Mountain	See Kern County					
Blue Ridge	See CDF					
Breckenridge	1943	K-B30'	C3		S/S	31 T28S R32E
Buck Rock	1923		4A*		S	06 T14S R29E
Cahoon Rock	See Sequoia NPS					
Church Dome	1937		C3		NB	12 T24S R34E
Cook Peak	1936	K-B30'	C3		D/D	33 T26S R33E
Delilah	1959	BOX-B67'	M15'		S/S	11 T13S R26E
Eshom Point (Peak)	1933P	No other information				09 T15S R28E
Freezeout Point	See Slate Mountain					
Gray Meadow	1939P	Emergency site			NB?	04 T20S R32E
Hockett	1937	K-B30'	C3		NB	03 T20S R33E
Jordan Peak	1935	H-B20'*	C3		S/S	15 T20S R31E
Little Baldy	1938P	No other information			D	14 T15S R29E
Lookout Mountain	1937	K-B30'	C3		NB?	35 T21S R33E
Mitchell Peak	See Sequoia NPS					
Mule Peak	1936		C3		S	15 T22S R31E
Oak Flat	1935	K-B30'	C3		S/S	36 T27S R30E
Old Slate Mountain	See Slate Mountain					
Piute Mountain	1934		C3		D	30 T28S R34E

SEQUOIA NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Piute Peak	1920s?	Tree		UK	S/D	36 T28S R33E
Poso (G.S.)	1936	Guard Station		C2		28 T24S R31E
Sherman Peak	1936P	RTT?	Log		D/D	14 T22S R33E
Slate Mountain	1915P			Log	S	25 T21S R31E
Stagg Dome	1934		C3		D	03 T13S R30E
Sunday Peak	1933P		4AR?		D	06 T25S R32E
The Needles (Lloyd)	1937	SPD9'	C3		S/S	14 T21S R32E
Tobias Peak	1936		C3		S	07 T24S R32E

SHASTA NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Bear Mountain	See CDF					
Billys Peak	1934	H-B20'	C3		R/D	26 T38N R8W
Black Butte	1963	BLK	C16		D/R	30 T41N R4W
Black Fox Mountain	1939	BETT30'	C3		S/S	06 T40N R1E
Bolivar-Craggy	See Klamath USFS					
Bonanza King	1934		C3	AWS	S/S	12 T37N R7W
Brock Mountain	1932	TT16'	R1		D/D	18 T34N R2W
Bunchgrass Mountain	1934	K-B30'	C3		D/D	35 T36N R1E
Craggy Peak	See Klamath USFS					
Damnation Peak	1933P	Tree			UK	23 T36N R6W
Delta Point	1936	TT10'	C3		D/D	23 T36N R5W
Gazelle Mountain	See Klamath USFS					
Girard Ridge	1931	BETT12'	4AR		S/S	25 T38N R4W
Girard Peak	1931P	Platform		UK	D/D	25 T38N R4W
Grey Butte	1927		4AR?		D	04 T40N R3W
Grizzly Peak	1953	BLK5'	CL10		S/S	21 T38N R1W
Hirz Mountain	1940	K-B20'	C3		S/S	07 T35N R3W
Hogback Mountain	1977	BRK9'	C16		S/S	20 T35N R1W
Little Mount Hoffman	1940		C3		S	08 T43N R3E
Little Round Mountain	1933	TT24'	R1		D/D	04 T34N R1W
Mount Bradley	1933	BETT13'	R1		S/S	22 T39N R4W
Mount Eddy	1915?		CU	SPD	D/S	18 T40N R5W
Mount Hoffman?	1931	Relocated to Little Mt. Hoff.?				31 T44N R4E

SHASTA NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Northfork Mountain	1935		C3		D	32 T37N R2W
Oat Mountain	1938	Location and type unknown				
Pilgrim Creek	1930s	Tree (Exp. Forest)			S	08 T40N R1W
Sherer Ridge	1937	TT20'	C3		NB?	T39N R6W
Shirttail Peak	See Trinity USFS					
Sims Ridge (Butte)	1931	TT8'	4AR		D/D	29 T37N R4W
Slate Mountain	1932	BOTT24'	R1		S/S	03 T36N R6W
Soldier Mountain	See CDF					
Sugarloaf Mountain	1931	BETT8'	4AR		S/S	04 T35N R5W
Sugar Pine Peak	1937	TT10'	C3?		NB?	

SIERRA NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Bald Mountain (Baldy)	1935	H-B19'	C3		S/S	35 T9S R25E
Black Mountain	See CDF					
Black Point	UK	Emergency site			NB?	17 T8S R25E
Burro Mountain (Burre)	1940P	TT20'	W10'?		D?	33 T10S R24E
Burrough Mountain	See Burro Mountain					
Castle Peak	See Oat Mountain					
Crystal Peak	Misspelling of Castle					
Crown Valley (G.S.)	1920s?	Guard Station		UK		29 T11S R29E
Cattle Mountain	1938P	Emergency site			NB?	04 T5S R25E
Devils Peak	See Signal Peak					
Fence Meadow (Point)	1934	H-B20'	C3		S/S	19 T11S R26E
Goat Mountain (South)	1934	H-B20'	C3		S/S	34 T7S R22E
Hog Mountain (South)	1940P	TT20'	W10'	UK	NB?	14 T12S R24E
Kaiser Peak	1933P	No other information				25 T7S R25E
Lookout Peak?	1933P	No other information				21 T13S R30E
Long Meadow Ridge	UK	Emergency site?			NB?	T8S R27E
Miami Peak	1934	H-B20'	C3		S/S	11 T6S R20E
Mount Tom	1940	K-B30'	C3		S/S	30 T6S R26E
Mount Raymond	1938P	Emergency site			NB?	10 T5S R22E
Musick Mountain	1939	H-B20'	C3		S/S	01 T9S R24E
Oat Mountain	1930	H-B20'	4AR		R/D	34 T8S R23E
Pilot Peak	1915		UK		D	05 T6S R21E

SIERRA NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Pinchusion	1938P	Emergency site			NB?	26 T5S R26E
Pinoche	1940P		W10'	UK	D	33 T3S R20E
Quartz Mountain	1938P	Emergency site			NB?	03 T5S R23E
Raymond Mountain	1938P	No other information				09 T5S R22E
Shark Tooth	1938P	Emergency site			NB?	28 T5S R27E
Shuteye Peak (Big)	1957	Blk10'	CL10		S/S	02 T7S R23E
Signal Peak	1951	Blk10'	CL10		S/S	01 T5S R20E
Spanish Peak (Mtn)	1938	K-B30'	C3		NB	11 T11S R28E
Sweatwater Point	1933	Emergency site?			NB?	21 T4S R19E
Wawona Point	See Yosemite NPS					
Weldon Point	1916P	No other information			D?	20 T11S R24E

SIX RIVERS NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Ammon Ridge	1934?	Tree?		C2*	?/S	16 T5N R5E
Baldy Peak	No information				D	22 T15N R4E
Bear Basin Butte	1937?	TT20'	C3		D/D	03 T16N R4E
Bee Tree Mountain	See Ammon Ridge					
Big Hill	See BIA					
Blake Mountain	See Trinity USFS					
Blue Creek Mountain	UK/41?	Tree		AWS	S/D	30 T12N R4E
Board Camp Mountain	1934	H-B20'	C3		D/D	27 T4N R4E
Branen Mountain	UK/31	Tree/UK			UK/D	23 T7N R4E
Brush Mountain	1934	K-B30'	C3		S/S	12 T6N R4E
Buck Mountain	1969	SPD12'	SPD	TRL	R/R/R	05 T14N R3E
Camp-6 Mountain	1935?	NOTT30'	B42		S/S	31 T17N R3E
Cold Springs	1934	BOTT12'	C3		D/D	20 T2N R6E
Eightmile Peak	1961	K-B11'	C16		S/S	25 T2N R5E
Four Brothers	See Ship Mountain					
Goat Hill	See Lassics					
Grizzly Mountain	1934P	AM30'	M7'	SPD	R/R/D	34 T2S R6E
Grouse Mountain	34/77?	K-B30'	C14R		S/S	01 T4N R4E
Haman Ridge (Duncan)	1933P			SPD	D	03 T5S R7E
Hayden Roughs	1933P	No other information			D	07 T26N R12W
Hettenshaw	1932		Tent		D	28 T2S R7E
High Dome	No information				D	20 T18N R3E
High Plateau	see Long Ridge					

SIX RIVERS NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Horse Ridge	1933	BOTT21'	R1		S/S	19 T28N R12W
Iaqua Buttes	See CDF					
Kettenpom Peak	1936	BOTT17'	C3		S/S	02 T4S R6E
Lassics Peak (Mount)	1935			C2	D	07 T2S R6E
Lems Ridge	See Buck's Mountain					
Little Rattlesnake Mtn	See Rattlesnake Mountain					
Long Ridge	1930s?	BOTT10'	R610'		S/D	27 T18N R2E
Mad River Rock	1936		C3		D	15 T1S R6E
Monkey Ridge	No information				D	02 T18N R3E
Orleans Mountain	1933	NETT11'	R1		S/S	11 T10N R6E
Rattlesnake Mountain	No information				D	17 T15N R2E
Red Mountain	See CDF					
Salmon Mountain	No information				D	08 T9N R7E
Sanger Peak	1958		R6		D	29 T18N R5E
Shannon Butte	No information				D	34 T3S R7E
Shelton Butte	1934	TT10'	C3		D/D	20 T10N R5E
Ship Mountain	1930?	TT	4AR		D/D	35 T16N R3E
Ship Mountain	1960s		TLR	R1M*	S/S	02 T15N R3E
Stone Corral	No information				D	26 T18N R1E
Summit (Valley)	UK	Tree				22 T14N R3E
Trinity Summit	1920s?			SPD	D?	14 T8N R6E
Upper Coon Mountain	1935P	No other information			D	32 T17N R3E
Youngs Peak	No information				D	04 T17N R5E

STANISLAUS NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal		
American Camp	1930	AM60'	M7'	C1?	S/S/D	25	T3N	R14E
Armstrong Hill	See Eldorado USFS							
Aspen Valley Ridge	See Yosemite NPS							
Blue Mountain	1934	Blk8'	C3		D/D	30	T6N	R15E
Camp Crandall Hill	See Crandall Peak							
Crandall Peak	1934	BETT17'	C3		S/S	31	T4N	R17E
Darby Knob	1933P	Tree			UK	25	T4N	R14E
Devils Nose	33P/NB	Platform		C2?	D/NB	15	T7N	R14E
Duckwall Mountain	35/51	AM100'	M7'	SPD	S/S/S	04	T1N	R17E
Early Intake	See Jones Point							
Folsom	1934	TT30'	C3		D/D	20	T7N	R15E
Forebay	1940P	TT20'	C3		D/D	06	T3N	R15E
Jones Point	1936		C3		D	10	T1S	R18E
Leeks Springs Hill	See Eldorado USFS							
Liberty Hill	1926?	RTT?	UK		D/D	15	T6N	R17E
Manzanita Point	1940s?	No other information			NB	01	T4N	R14E
McCormick	1934	TT10'	C3		D/D	24	T4N	R15E
Mount Elizabeth (Peak)	1961	K-B55'	C16		S/S	32	T3N	R16E
Mount Reba	1967			R1M	R	32	T8N	R18E
North Mountain	1964	K-B55'	C16		S/S	33	T1N	R19E
Pilot Peak	1963	K-B20'	C16		S/S	13	T2S	R18E
Pinecrest Peak	1934		C3		D	06	T4N	R19E
Slash Disposal	1927P	UK	UK		D/D	01	T4N	R17E

STANISLAUS NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Smith Peak	1952	K-B20'	C14		S/S	34 T1S R17E
Sugarloaf Mountain	1934	BETT17'	C3		D/D	31 T1N R17E
Thompson Peak (Meadow)	1936	BETT20'	C3		D/D	26 T2N R17E
Trumbull Peak	1934	AM45'	M7'	C2	S/S/S	09 T3S R19E
Wet Meadow Hill	1933P	No other information			D	24 T1N R16E
Woods Ridge	1939	AM100'	M7'	C2*	S/S/S	11 T1N R18E

TAHOE NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Alaska Peak	1934	BETT16'	C3		D/D	06 T18N R9E
Babbitt Peak	1937?	NETT7'	C3		S/S	08 T20N R17E
Bald Mountain (Duncan)	1937	NETT5'	C3		.S	15 T15N R13E
Banner Mountain	20/35	AM60'	M7'	C1?	S/S	16 T16N R9E
Bear River Lookout	1933P	No other information				
Big Valley Bluff	1936	TT18'	C3		D/D	25 T16N R12E
Calpine Hill	1934	BETT17'	C3		S/S	18 T21N R14E
Camels Hump	1939?	TT8'	C3		D/D	28 T16N R10E
Cherry Hill	1933	TT16'	C3		D/D	24 T18N R10E
Chipmunk Ridge	1930s	Emergency shelter			NB	
Crystal Peak	1933P	No other information			D	28 T20N R17E
Columbia Hill	1936	TT16'	C3		D/D	28 T18N R9E
Dog Valley Point	1937P		W8'		D?	25 T20N R17E
Donner Peak	See Southern Pacific Railroad					
Duncan Peak	1941P	TT	C3?		R	10 T15N R13E
Granite Peak	1933P	No other information			D	24 T19N R17E
Grouse Ridge	1923?		4AR		S	34 T18N R12E
Hess Lookout	1933P	No other information				
Helester Point	1938	K-B20'	C3		S/D	36 T16N R11E
Junction House	1930s	Guard Station				
Little Bald Mountain	See Bald Mountain					
Martis Peak (Point)	1918		4A*		S	25 T17N R17E
McClellen Peak	1935		C3		D	Nevada

TAHOE NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Mosquito Ridge	1935	AM60'	M7'	C2	D/D/D	25 T14N R11E
Red Mountain	See Southern Pacific Railroad					
Rocky Point (Bald Top)	1930s	Emergency shelter			NB	22 T20N R9E
Saddleback Mountain	1934	BETT7'	C3		S/S	33 T21N R10E
Sardine Peak	1935	BETT17'	C3		S/S	34 T20N R16E
Sierra Buttes	1963	Blk12'	C16		S/S	17 T20N R12E
Signal Peak	See Red Mountain					
Stateline Point	See Lake Tahoe Basin M.U.					
Verdi Peak	1983		KEV	TLR	S/S	25 T19N R17E
Zephyr Point	See Lake Tahoe Basin M.U.					

TRINITY NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Backbone Ridge	1935			C2	D	17 T35N R11W
Beegum Peak	See CDF					
Bennett Peak	See Lake Mountain					
Black Rock	1935	BOTT21'	C3		S/S	08 T27N R10W
Blake Mountain	UK/38	Tree/UK	UK	SPD	D/D/D	25 T3N R5E
Blue Mountain	No information				NB?	12 T35N R7W
Bowerman Ridge	1956	NOTT40'	C14		D/D	26 T35N R8W
Buckeye Ridge	1939	TT20'	C3		NB	T34N R8W
Cabin Peak	1935		C3		D	03 T36N R12W
Canyon Creek	1934			C2	D	36 T35N R11W
Coffey Pot	1940P	LOF		SPD	NB?	27 T2S R6E
Cold Springs	1934	BOTT14'	C3		D/D	21 T2N R6E
Dedrick Point	See Canyon Creek					
Deerlick (Springs)	1933			C2	R	19 T30N R9W
Dubakella	See Dubit Kelly					
Dubit Kelly	1940P		C3		D	07 T29N R11W
Eagle Rock	1935		C3		D	06 T4N R8E
Goat Camp (Lassics)	See Six Rivers USFS					
Granite Peak	1916		GDN?		D	10 T35N R9W
Greasewood Hill	1934			C2	D	26 T27N R8W
Grizzly Mountain	1934P	AM30'	M7'	UK	R/R/D	34 T2S R6E
Hayfork Bally	1965	K-B42'	C16		S/S	03 T32N R12W
Hettenshaw Peak	See Six Rivers USFS					

TRINITY NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Ironside Mountain	1940		C3		S	01 T5N R6E
Knob Peak	1934	BETT13'	C3		S/S	02 T29N R10W
Lake Mountain	1937	H-B20'	C3		NB	36 T4N R5E
Lamb Gap?	No information				D	25 T1N R6E
Limedyke Mountain	1937	K-B30'	C3		S/S	29 T2N R7E
Mary Blaine Mountain	1925?		4AR		D	07 T37N R12W
Mears	Possibly near Buckeye Ridge				NB?	
Packers Peak	1920s?		4AR?		D	02 T37N R10W
Packers Peak (G.S.)	1920s?			Log	S	35 T38N R10W
Pattymocus Butte	See CDF					
Pettyjohn Mountain	1939P	Tree		UK	Snag	19 T34N R8W
Pickett Peak	1965	K-B55'	C16		S/S	26 T1S R7E
Platina Point?	No information				D	14 T29N R9W
Plummer Peak	1937	H-B20'	C3		S/S	34 T31N R12W
Post Creek	1934			C2	S	31 T28N R9W
Red Mountain	1934	AM30'	M7'	SPD	D/D/D	32 T29N R11W
Shasta Bally	No information				NB?	27 T32N R7W
Shell Mountain	No information				NB?	11 T26N R11W
Shirttail Peak	1936		C3		D	06 T33N R6W
Tedoc Point (Mtn)	1920s?	No other information			D	29 T28N R9W
Thompson Peak	No information					05 T36N R10W
Tomhead Mountain	1939	H-B20'	C3		S/S	06 T26N R8W
Trinity Mountain	1940P	No other information				04 T34N R7W

TRINITY NATIONAL FOREST

Trinity Summit	1932			SPD	D	14	T8N	R6E
Virgin Creek Point	1934		C3		D	23	T8N	R7E
Weaver Bally	1935	BOTT16'	C3		S/S	16	T34N	R10W
Windy Nip?	No information				D	03	T1N	R6E
Yolla Bolly	1933	Guard Station		C2	D	22	T27N	R10W

TOIYABE NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Angora Ridge	See Lake Tahoe Basin M.U.					
Leviathan Peak	84/35?	BLK10'	R4		S/S	30 T10N R22E
Markleeville Peak	UK	(AKA Leviathan?)				T10N R21E
McClellen Peak	1935		C3		D	T16N R20E
Peavine Mountain	UK	TT	UK		D?	T20N R20E
Slide Mountain	UK	No other information			D	30 T17N R19E
Zephyr Point	See Lake Tahoe Basin M.U.					

General Inventory

The information in this listing is incomplete. All construction dates for currently standing fire lookouts should be viewed as within one to two years. Construction dates and building descriptions pertain to the last facility to occupy a given site. For example, the Mount Hough site (Plumas National Forest) saw its first lookout in 1912. In 1916 it was reconstructed and in 1934 it was replaced. The inventory listing will only list the 1934 date and building description. Space constraints precluded including all construction information.

The description designations are explained in the preceding classification section. An example follows:

Chews Ridge: 29/84 L2 C14R S/S

Translation: L2 type tower built in 1929, revised C14 cab design built 1984, both still standing. Keep in mind that TT = timber tower, W = wood, M = metal, S = steel, SHL = wood shelter, SPD = special design and * = building significantly modified after construction. Under status, S = standing, R = relocated, D = demolished and NB = not built. ? = listed information not varified. 1933P = lookout built prior to 1933. When known, tower types are followed by height in feet and cabs by width in feet unless the design type never varied, e.g. all C3 cabs are 14' X 14'.

It is believed that all existing lookouts have been discovered. However, there may be several trees standing which have escaped notice. All status information updated to June 1st, 1986. Several lookouts have since been removed.

ANGELES NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Blue Ridge	1929	NOX-B	M8'?	Stone	D/D/S	13 T3N R8W
Cucamonga Peak	No information					35 T2N R7W
Grass Mountain	1934	NOTT10'	C3		D/D	01 T6N R15W
Grassy Mountain	See Grass Mountain					
Johnstone Peak	1939	K-B30'	C3*		S/S	23 T1N R9W
Josephine Peak	1935	NOTT10'	C3		D/D	05 T2N R12W
Lookout Mountain	1920s	TT	4AR?		D/D	24 T2N R8W
Los Pinetos	1935	NOTT10'	C3		D/D	09 T3N R15W
Mendenhall Peak	1937	NOTT10'	C3		D/D	14 T3N R14W
Mount Baldy	No structures, see Lookout Mtn.					06 T2N R7W
Mount Gleason	1927	NOX-B60'	M8'	Stone	D/D/S	06 T3N R12W
Mount Islip	1927	NOX-B21'	M8'	Stone	D/D/S	17 T3N R9W
Mount Lukens	1933P	NOTT10'	4AR		D/D	09 T2N R13W
Mount San Antonio	See Mount Baldy					
Mount Wilson	1920s	150' Solar tower		SHL	S/D	29 T2N R11W
Pine Mountain	1935	NOTT10'	C3		D/D	26 T2N R10W
Pine Mountain #2	See Vetter Peak					
Reservoir Summit	1935	NOTT10'	C3		D/D	30 T7N R17W
San Dimas	See Johnstone Peak					
San Gabriel Peak (Mtn)	1935P	S10'	C3?		D/D	24 T2N R12W
Sawmill Peak	No information				D	29 T7N R15W
Sierra Pelona	34/36	K-B30'	C3		D/D	34 T6N R14W
Sister Elsie Peak	See Mount Lukens					

ANGELES NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Slide Mountain	1970	L-36,13'	C19		S/S	10 T6N R18W
South Mount Hawkins	1939	BOTT30'	C3		S/S	27 T3N R9W
Sunset Peak	27/29	K,X-B20'	4AR		D/D	35 T2N R8W
Vetter Peak	1935		C3		S	33 T3N R11W
Warm Springs Mountain	1934	H-B20'	C3		S/S	21 T6N R16W
West Liebre	1936	BETT20'	C3		D/D	05 T7N R17W
Whitaker Peak	1934	NOTT10'	C3		D/D	36 T6N R18W

CLEVELAND NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Black Mountain	1935	TT20'	C3		D/D	06 T12S R2E
Bolero	See Orange County					
Bottle Peak	See CDF					
El Carriso (G.S.)	No information					16 T6S R5W
Estelle Peak	1935	K-B30'	C3		R/D	05 T5S R5W
High Point	1965	K-B67'	C16		S/S	25 T9S R1E
Hot Springs Mountain	28/34	NOTT23'	C3		S/S	17 T10S R4E
Los Pinos	1964	K-B30'	C16		S/S	33 T16S R4E
Lyons Peak	1964	K-B40'	C16		S/S	10 T17S R2E
Margarita Peak	See Santa Margarita					
Miller Mountain	1930s	Emergency shelter			NB	10 T8S R5W
Monument Peak	No information				D	01 T15S R5E
North Elsinore	1930s	Emergency shelter			NB	T6S R5W
Palomar Mountain	See High Point					
Saddleback Mountain	See Santiago Peak					
San Juan (G.S.)	No information					33 T6S R6W
San Juan Hill	1930s	Emergency shelter			D	09 T3S R8W
Santa Margarita	1965	K-B30'	C16		S/S	27 T8S R5W
Santiago Peak	64&51	35'H-B type w/ C10*			S/S	29 T5S R6W
Shriners' Lodge	1928	Platform and tree			D	T15S R5E
Sierra Point (Peak)	1930	Emergency shelter			D	06 T4S R7W
Silverado Peak	1936	TT10'	C3		D/D	
Vallecito Point	See Shriner's lodge					

ELDORADO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Alder Ridge	1937	AM60'	M7'	C2	S/S/S	05 T10N R15E
Armstrong Hill	1937	AM80'	M7'	C2	S/S/S	13 T8N R4E
Bald Mountain	59/36	K-B30'	CL10	C2	S/S/R	12 T12N R11E
Baltic Peak	1931	AM80'	M7'	C1?	S/S/S	26 T10N R13E
Big Hill	1935	H-B20'	C3		S/S	33 T12N R14E
Bunker Hill	41-5/40	C6	C3		S/S	23 T14N R14E
Devil Peak	UK	Tree		UK	S/D	20 T13N R13E
Hotchkiss Hill	No infomation				D	12 T12N R11E
Iron Mountain	UK/35	Tree		C2	S/D	19 T10N R15E
Jakeys Hill (Jake's)	1935	H-B20'	C3		R/D	18 T13N R11E
Leeks Springs Hill	1961	K-B30'	C16		S/S	14 T9N R15E
Lookout Mountain	1935	H-B20'	C3		S/S	18 T12N R13E
Lynchburg Hill	No information				D	10 T13N R12E
Mount Danaher	See CDF					
Nevada Point Ridge	See Devil Peak and Wallace Peak					
Old Iron Mountain	UK	Tree		UK	D/D	23 T10N R14E
Plummer Ridge	1935			C2	S	20 T9N R14E
Plummer Ridge	UK	Tree		UK	D/D	13 T9N R14E
Robbs Peak	1937	BLK8'	C3		S/S	34 T13N R14E
Round Mountain	See CDF					
Saddle Mountain	No information				D	36 T12N R12E
Sand Mountain	No information				D	20 T12N R12E
Slate Mountain (#1)	No information				D	06 T11N R13E

ELDORADO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Slate Mountain (#2)	1935	H-B20'	C3		S/S	06 T11N R13E
Spanish Hill	No information				D	01 T11N R10E
Union Hill	No information				D	32 T11N R13E
Wallace Peak	1950s			R1M	R	19 T14N R14E

INYO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Bald Mountain	1940s	Log cabin			S	08 T2S R38E
Bald Mountain	1963		C17	L-33	S/S	08 T2S R38E
Kern Peak	1930s?	Platform			S	03 T19S R34E

KLAMATH NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Bald Mountain	See Collins Creek Baldy					
Baldy Mtn (Happy Camp)	1938	BETT10'	C3		S/S	11 T16N R6E
Ball Mountain	1937	BETT30'	C3		S/S	25 T46N R3W
Bear Mountain	No information					
Bear Wallow Peak	No information				D	28 T42N R11W
Blue Ridge	1934	AM80'	M7'	C2	S/S/S	11 T39N R12W
Bolivar-Craggy	1960	BLK9'	CL10		S/S	33 T40N R8W
Buckhorn Bally	1933	BETT13'	R1		S/S	17 T47N R8W
Buckhorn Mountain	1940P	TT12'	C3?	SPD	NB/D	
Bullion Mountain	1915	Tree		UK	D/D	02 T47N R8W
Cecil Point	34/54	TT10'	C3	R1M	D/D/R	17 T37N R11W
China Peak	1937	TT20'	C3		D/D	18 T46N R12W
Collins Creek Baldy	80/34	BEWF20'	C3		S/S	02 T45N R10W
Condrey Mountain	No information				D/D/D	11 T47N R10W
Craggy Peak	1920s?		UK		D	09 T39N R8W
Deadwood Peak (Baldy)	1934	TT10'	C3		D/D	07 T45N R8W
Denny Point	1961		W6'	UK	D	31 T42N R8W
Doe Peak	No information				D	12 T41S R1W
Dry Lake Mountain	1925	TT6'	UK		D/D	19 T47N R9W
Dutchman's Peak	See Rogue River USFS					
Eagle Peak		Tree		UK	D/D	32 T39N R8W
Eagle Rock	12/30s	Tree/TT	UK		D/D	32 T47N R3W
Eddy Gulch (#1)	1917		UK		D	15 T39N R11W

KLAMATH NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Eddy Gulch (#2)	1958	K-B20'	CL10		S/S	15 T39N R11W
English Peak	1960		W8'		S	15 T41N R12W
English Peak Cabin	1890s	Log residence for above			S	16 T41N R12W
Fool's Paradise	See Paradise Craggy					
Garner Mountain	1930s	Emergency site			NB	12 T43N R1E
Gazelle Mountain	1933	TT20'	R1		D/D	08 T41N R7W
Harrington	No information				D	
Herd Peak	1933		R1		S	30 T44N R3W
Hungry Creek Peak	1937	TT20'	C3		D/D	24 T48N R8W
Lake Mountain	177/33	ROCK8'	R1		S/S	17 T45N R11W
Lakeview	1937	TT20'	C3		D/D	06 T47N R4W
Lower Devils Point	1963	BLK8'	C16		S/R	35 T47N R12W
Marble Mountain (Rim)	UK	Platform			UK	22 T43N R12W
Marble Mountain Cabin	No information				UK	21 T43N R12W
Mary Blaine	1938		C3		D	32 T37N R12W
McGavin Peak	1911	Emergency site			NB	08 T47N R2W
Medicine Mountain	1934		C3		D	25 T13N R7E
Mount Ashland	See Rogue River USFS					
Mount Hebron	1930s	Water tower			D	32 T46N R1W
Offield Mountain	1933	TT18'	R1		D/D	23 T12N R6E
Orr Mountain	1934	K-B30'	C3		S/S	16 T44N R1W
Packers Peak	See Trinity USFS					
Paradise Craggy	1932		R1		D	28 T46N R6W

KLAMATH NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Pony Peak	1934	TT6'	C3		D/D	13 T14N R5E
Quartz Hill	See CDF					
Scott Bar Mountain	1934	BETT10'	C3		S/S	15 T44N R11W
Secret Springs Mtn.	1933P	Emergency site				30 T48N R2W
Slater Butte	1984	BEWF22'	C14R		S/S	13 T17N R7E
Ukonom Mountain	1978	BLK14'	C16		S/S	22 T14N R6E
Van Bremmer	1933	TT20'	R1		D/D	19 T44N R2E
Windy Peak	See Rogue River USFS					
Yellow Dog Peak	1940P	Emergency shelter			D	24 T41N R11W

LAKE TAHOE BASIN MANAGEMENT UNIT

Site	Const.	Tower	Cab	House	Status	Legal
Angora Ridge	35/31		C3	SPD	S/S	13 T12N R17E
Stateline	83/UK		KEV	TLR	S/S	19 T16N R18E
Zephyr Point	1932	NETT20'	R1		S/S	10 T13N R18E

LASSEN NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Antelope Peak	1977	SDY	SDY		S/S	36 T32N R9E
Backbone Ridge	1932			C1?	D	31 T33N R3E
Bald Mountain	See CDF					
Blacks Ridge	34/38	AM45'	M7'	C2	S/S/S	03 T34N R7E
Blacks Cabin Ridge	See Blacks Ridge					
Bogard Buttes	See West Bogard					
Bottle Hill	1934?	Emergency shelter			D	16 T25N R4E
Brokeoff Mountain	1924		4AR		D	20 T30N R4E
Bull Hill	1920s?	Tree			UK	33 T26N R4E
Burney Mountain	1963?	BLK10'	C16		S/S	15 T34N R3E
Cambellville	See CDF					
Colby Mountain	1934	K-B30'	C3		S/S	33 T27N R4E
Crater Peak	See Magee Peak					
Digger Butte	See CDF					
Dow Butte	1940	NETT9'	C3		S/S	10 T33N R10E
Dyer Mountain	1934	NETT15'	C3		S/S	36 T28N R8E
Elam Creek Point	1934?	Emergency shelter			UK	T27N R5E
Harvey Mountain	1934	AM60'	M7'	4A*	D/D/S	12 T33N R8E
Harvey Valley	1933	Guard Station?				01 T32N R8E
Hat Creek Rim	1934	K-B30'	C3		S/S	15 T34N R5E
Inskip (Paynes Creek)	See CDF					
Jack's Backbone	See Backbone Ridge					
Ladder Butte	1932		R1		D	16 T34N R6E

LASSEN NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Latour Butte	See CDF					
Lava Peak	1940s		W8'	TLR	S/R	07 T34N R10E
Lone Pine Point	See CDF					
Magee Peak	1920s?		4A		D	27 T33N R3E
McCarthy Point	1936			C2	S	19 T27N R3E
Mount Harkness	See Lassen Volcanic NPS					
Mount Lassen	1912		GDN		D	34 T31N R4E
Peg Leg Mountain	See CDF					
Platte Hill	See CDF					
Prospect Peak (East)	See Lassen Volcanic NPS					
Round Mountain	1930s	Emergency shelter			NB	04 T27N R2E
Sawmill Peak	See CDF					
Rocky Knob	1934?	Emergency shelter			UK	
Turner Mtn. (South)	1934	AM60'	M7	C3	S/S/S	10 T28N R3E
West Bogard Butte	1934?	Emergency shelter			D	35 T32N R7E
West Prospect Peak	1935	NETT10'	C3		S/S	36 T32N R5E
West Soda Ridge	1934?	Emergency shelter			D	T26N R6E
Windy Cut	1936			C4	D	25 T27N R3E

LOS PADRES NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Anderson	AWS		CU	AWS	D/D	21 T20S R3E
Avenales (Pine Ridge)	AWS		CU	AWS	D/D	34 T31S R16E
Bald Mountain	AWS		CU	AWS	D/D	08 T31S R14E
Bates Ridge	No information				D	29 T10N R28W
Big Pine	See West Big Pine					
Black Mountain	1964	BLK11'	C16		S/R	15 T29S R15E
Branch Mountain	1935	K-B30'	C3	AWS	S/S/S	31 T31S T18E
Caliente Mountain	1943		CU	AWS	S/S	16 T11N R27W
Camuesa Peak	1935	NOTT10'	C3		D/D	03 T5N R27W
Cerro Alto	1964	UK	C16		UK/R	07 T29S R12E
Chalk Peak	1916	Platform			D	28 T22S R5E
Chews Ridge	29/84	L-2	C14R		S/S	06 T19S R4E
Cobblestone Mountain	1933P	No information				14 T6N R19W
Cone Peak	1965		C16		S	02 T22S R4E
Cuyama Peak	1935	H-B20'	C3	AWS	S/S/S	25 T8N R24W
Double Cone	See Ventana Double Cone					
Figueroa Mountain	1965	BLK13'	C16		S/S	25 T8N R30W
Frazier Mountain	1934P	NETT11'	R1?		S/S	14 T8N R20W
Gaviota Peak?	No information				NB?	23 T5N R32W
Hi Mountain	1965	BLK10'	C16		S/S	01 T31S R14E
Junipero Serra Peak	1935	K-B30'	C3		S/S	34 T20S R5E
Knapp Lookout #1	1928P			SPD	D	
Knapp Lookout #2	1928P			SPD	D	

LOS PADRES NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
La Cumbre Peak	1945	K-B20'	C10		S/S	21 T5N R27W
Los Coches	AWS		CU	AWS	D/D	33 T11N R32W
Madulce Peak	1934	TT10'	C3		D/D	14 T7N R26W
Manzanita Peak	1934	BOTT20'	C3		D/D	31 T10N R30W
McKinley Mountain	AWS		CU	AWS	D/D	08 T7N R28W
McPherson Peak	1934		C3		S	06 T9N R27W
Miranda Pine Mountain	No information				D	10 T11N R30W
Mount Carmel	AWS		CU	AWS	D/D	07 T18S R2E
Mount Pinos	No information				D	06 T8N R21W
Mutau (Mataw)	1934	H-B?20'	C3		D/D	
Nordhoff	1940	H-B20'	C3		S/D	24 T5N R23W
Pinyon Peak (Pinon)	1937	K-B30'	C3		D/D	25 T20S R5E
Pinyon Peak	See CDF					
Plaskett Ridge	AWS				D	
Potrero Secco	AWS		CU	AWS	D/D	04 T6N R24W
Reyes Peak	1927P	TT	4AR		D/D	11 T6N R23W
Rincon Mountain (Peak)	1936	H-B20'	C3		D	05 T3N R24W
Salisbury Potrero	AWS		CU	AWS	R/R	36 T9N R27W
Santa Lucia Peak	See Junipero Serra Peak					
Santa Paula Peak	1930	NOTT10'	4AR		D/D	07 T4N R20W
Santa Ynez Peak	1934	K-B30'	C3		D/D	12 T5N R30W
South Mountain	See Ventura County					
Stanley Mountain	No information					33 T12N R32W

LOS PADRES NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Strawberry Peak	See Madulce Peak					
Three Peaks	1934	BETT8'	C3		D/D	15 T24S R6E
Thorn Peak	1938	H-B20'	C3	AWS	S/S/S	17 T6N R21W
Topa Topa Mountain	1938	H-B20'	C3	AWS	S/S/D	09 T5N R20W
Ventana Double Cone	1936		C3		D	11 T19S R2E
Ventana Peak	See Ventana Double Cone					
West Big Pine	1934	NOTT10'	C3		D/D	12 T7N R27W
Zaca Peak	1920s?	Site not improved?				15 T8N R30W

MENDOCINO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Anthony Peak	1935	BETT11'	C3		S/S	15 T23N R10W
Ball Mountain	1935	TT4'	C3		D/D	17 T24N R8W
Beaver Glade	1930s?	Guard Station			D	17 T24N R10W
Bidwell Point	See Elk Creek Butte					
Big Signal Peak	1962	BLK25'	C16		S/S	08 T19N R11W
Black Butte	1936P		UK		D	27 T22N R9W
Black Diamond	1935	K-B30'	C3		D/D	15 T18N R7W
Eagle Peak	1935	BETT18'	C3		D/D	22 T24N R7W
Elk Mountain	1933P	No other information				36 T17N R10W
Elk Creek Butte	1936			C2	D	09 T20N R6W
Flatiron	See Sheet Iron					
Franklin Place (Point)	1936P	Portable building			R	05 T25N R7W
Garrett Mountain	1935	BETT18'	C3		D	20 T17N R10W
Goat Mountain	1935	K-B30'	C3		S/S	01 T16N R8W
Hammerhorn Mountain	1923		4A?		D	22 T25N R10W
High Glade	1935	K-B30'	C3		S/S	25 T16N R9W
Hull Mountain	1974		SDY		S	11 T19N R10W
Hunter Point	1935	ROCK9'	C3		D/D	27 T16N R10W
Indian Dick	UK	Tree		UK	S/D	29 T24N R10W
Island	1930s	Guard Station			NB	T19N R10W
Little Doe Ridge	See Indian Dick					
Little Signal Peak	See Sanhedrin Mountain					
Long Point	1935	TT14'	C3		D/D	12 T21N R8W

MENDOCINO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Low Gap	1935	Guard Station		C2	S	02 T22N R10W
Osborn	1930s	Guard Station				30 T24N R10W
Oven Lid	No information				D	07 T25N R8W
Pacific Point (Ridge)	1935			C2	D	25 T16N R7W
Pine Mountain	1936			C2	S	32 T18N R10W
Pinnacle Rock	1923		4AR		D	17 T15N R8W
Poison Rock	1935	BETT20'	C3		D/D	25 T22N R11W
Potato Hill	1935	BETT20'	C3		D/D	06 T17N R8W
Red Mountain	1935	BETT20'	C3		D/D	23 T22N R7W
Sanhedrin Mountain	1933P	TT20'	W10'		D/D	15 T19N R11W
Sanhedrin Mountain	See also Big Signal Peak					
Sheet Iron Mountain	1935			C2	D	22 T19N R8W
Solomon	1933P	No other information				15 T25N R10W
Spruce Grove	1930s	Guard Station		C2	UK	22 T20N R10W
Sunset Gap	NB	Guard Station		C2	NB	03 T18N R11W
Tantrum Glade	UK	Guard Station		Log	UK	12 T24N R10W
Valley View	1935	TT14'	C3		D/D	07 T22N R7W
Wild Bill Ridge	No information					T16N R8W

MODOC NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Alturas Hill	1936P	Proposed shelter			NB	
Blue Mountain	30/65	K,X-B20'	C16		S/S	18 T46N R10E
Boyd Hill	1937	NETT10'	C3		D/D	04 T36N R8E
East Peak (Blue Mtn.)	1930s	Tree & Platforms			S	17 T46N R10E
Fox Mountain	1936	TT10'	C3		D/D	34 T40N R8E
Happy Camp Mountain	1950	BLK5'	C14		S/S	01 T41N R7E
Hayden Hill	1940	NETT10'	C3		S/S	31 T37N R10E
Likely Mountain	See CDF					
Lone Pine	1936P	Emergency shelter			NB	
Manzanita	See CDF					
Round Mountain	37/56	BLK9'	C14		S/S	01 T41N R4E
Sugar Hill	1931	K-B30'	4AR		S/S	26 T46N R14E
Sunflower Point	1938	TT10'	C3		NB	
Timber Mountain	1966	K-B30'	C16		S/S	29 T44N R6E
Warren Peak	1940	TT10'	C3		NB	22 T41N R15E
Widow Mountain	No information					05 T38N R6E

PLUMAS NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Argentine Rock	1937	NETT11'	C3		S/S	17 T24N R11E
Bald Eagle Mountain	61/64	Log45'	W10'	TLR	D/D/R	18 T24N R7E
Bear Ranch Hill	1936	TT8'	C3		D/D	13 T23N R5E
Ben Lomond	1915P		W10'?		D	21 T25N R6E
Big Bar Mountain	1949	K-B55'	C14		S/S	09 T22N R5E
Black Mountain	1936	NETT11'	C3		S/S	17 T26N R15E
Black Sage Mountain	See Black Mountain					
Brush Creek (W. C.)	1937	Tree/TT20'	C3		S/NB	07 T21N R6E
Camel Peak	1926		4AR?		D	32 T22N R8E
Campbell Peak	See CDF					
Chambers Peak		Emergency site			NB	05 T24N R6E
Claremont	1908		WC10'		D	02 T23N R9E
Dixie Mountain	1928	NETT10'	4AR		S/S	15 T24N R15E
Flea Mountain	1919	Tree			UK	24 T23N R4E
Kellogg Ridge	1957	TT8'?	W8'	TLR	D/D/R	19 T22N R7E
Kettle Rock	1953	BLK9'	C14		S/S	02 T26N R11E
Lexington Hill	1961	K-B20'	C16		R/R	18 T21N R9E
Magalia	See Sawmill Mountain					
Mills Peak	1934	NETT9'	C3		S/S	10 T21N R12E
Mount Elwell	1918?		4A?		D	01 T21N R11E
Mount Fillmore	1914		W10'		D	20 T23N R8E
Mount Hough	1934	NETT9'	C3		S/S	08 T25N R10E
Mount Ingalls	1936	NETT10'	C3		R/R	28 T25N R12E

PLUMAS NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Mount Pleasant	1933P	Site not improved				
Oregon Peak	See CDF					
Pike County Peak	1983	K-B20'	C16		S/S	28 T19N R7E
Pilot Peak	1977	SDY	SDY		S/S	09 T22N R10E
Poverty Hill	1933P	BOTT25'	Plat		D/D	33 T21N R9E
Radio Hill	1938		C3		D	13 T24N R9E
Red Hill	1934	K-B30'	C3		S/S	10 T25N R7E
Red Rock	1955	NETT11'	C14		S/S	11 T28N R11E
Sawmill Mountain	See CDF					
Seven Lakes (Sisters)	See BLM					
Smith Peak	1936	NETT9'	C3		S/S	09 T23N R13E
Spanish Peak	1934			C2	D	19 T24N R8E
Sunset Hill	See CDF					
Swayne Hill (G. S.)	1923	Tree		SHL	D/D	34 T22N R5E
Table Mountain	1920		W10'		D	15 T22N R8E
Thompson Hill (Peak)	1932	NETT9'	R1		S/S	30 T28N R13E
Three Lakes Point	1937		C3		NB	31 T25N R7E

SAN BERNARDINO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Asbestos	1930s	Emergency site			NB	27 T6S R5E
Arrowhead Lake	1928P	Tree			D	
Arrowhead Springs	1933?	Guard Station			S	11 T1N R4W
Barker Bench Point	1937				NB	30 T2S R1E
Barker Peak	See Barton Peak					
Barton Peak	1935	TT10'	C3		D/D	25 T3S R1E
Bertha Peak?	1930s	Emergency site			NB	05 T2N R1E
Big Bear	1930P	Tree No other information				
Black Mountain	1962	K-B20'	C16		S/S	15 T4S R2E
Blue Cut	See VerBrycks					
Blue Ridge	See Angeles USFS					
Butler Peak	1936		C3		S	17 T2N R1W
Cajon Mountain	1935	K-B30'	C3		S/S	08 T2N R5W
Cajon Summit	See CDF					
Cugamonga Peak	No information					35 T2N R7W
Day Canyon	1934	Guard Station		C2	D	17 T1N R6W
DeSienna	1930P	No other information			D	T1S R4W
Grass Valley Ridge	1928	BOTT70'	W8'		D/D	19 T2N R3W
Job's Peak	1939P	Emergency site			NB?	18 T2N R4W
Keller Peak	27/32	K,X-B20'	R1		S/S	01 T1N R2W
Little Mountain	See CDF					
Manker Lookout	See Red Hill					
Miller Canyon	1935	BOTT20'	W8'		D/D	21 T2S R2E

SAN BERNARDINO NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Morton Peak	34/60	H-B20'	CL10		S/S	12 T1S R2W
Project Peak	1966			R1M	R	05 T2N R4W
Ranger Peak	1935	BOTT20'	W8'		D/D	06 T4S R2E
Red Hill	1938		C5	C5	S/S	04 T1S R7W
Red Mountain	1936	H-B20'	C3		S/S	23 T6S R1E
San Antonio Ridge	See Angeles USFS					
San Sevaine Point	1934	TT10'	C3		D/D	34 T2N R6W
Santa Rosa (Peak)	UK	Tree & log cabin			S/S	27 T7S R5E
Strawberry Peak	1933	K-B30'	R1*		S/S	30 T2N R3W
Strawberry Flat	See Grass Valley Ridge					
Sugarloaf	1934	AM60'	M7'	C2	NB	06 T1N R2E
Tahquitz Peak	1937	NETT9'	C3		S/S	09 T5S R3E
The Pinnacles	1937	Emergency site			NB	31 T3N R3W
Thomas Mountain	1935	AM60'	M7'	C2	D/D/D	28 T6S R3E
VerBrycks	1933P	TT	Plat.		D/D	13 T2N R6W
Vista Grande	1934?	BOTT20'	W8'		R	07 T4S R2E
Windy Knob	See Arrowhead Springs					
Yucaipa (Fire Tower)	1933?	No other information			NB	36 T1S R2W
Zanja Peak	1937	Emergency site			NB	23 T1S R2W

SEQUOIA NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Baker Ridge (Point)	50/43?	NOTT22'	C14	SPD	S/S/S	10 T24S R32E
Bald Mountain	1955	K-B30'	CL10		S/S	12 T22S R34E
Bear (Valley) Mountain	See CDF					
Blue Mountain	See Kern County					
Blue Ridge	See CDF					
Breckenridge	1943	K-B30'	C3		S/S	31 T28S R32E
Buck Rock	1923		4A*		S	06 T14S R29E
Cahoon Rock	See Sequoia NPS					
Church Dome	1937		C3		NB	12 T24S R34E
Cook Peak	1936	K-B30'	C3		D/D	33 T26S R33E
Delilah	1959	BOX-B67'	M15'		S/S	11 T13S R26E
Eshom Point (Peak)	1933P	No other information				09 T15S R28E
Freezeout Point	See Slate Mountain					
Gray Meadow	1939P	Emergency site			NB?	04 T20S R32E
Hockett	1937	K-B30'	C3		NB	03 T20S R33E
Jordan Peak	1935	H-B20'*	C3		S/S	15 T20S R31E
Little Baldy	1938P	No other information			D	14 T15S R29E
Lookout Mountain	1937	K-B30'	C3		NB?	35 T21S R33E
Mitchell Peak	See Sequoia NPS					
Mule Peak	1936		C3		S	15 T22S R31E
Oak Flat	1935	K-B30'	C3		S/S	36 T27S R30E
Old Slate Mountain	See Slate Mountain					
Piute Mountain	1934		C3		D	30 T28S R34E

SEQUOIA NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Piute Peak	1920s?	Tree		UK	S/D	36 T28S R33E
Poso (G.S.)	1936	Guard Station		C2		28 T24S R31E
Sherman Peak	1936P	RTT?	Log		D/D	14 T22S R33E
Slate Mountain	1915P			Log	S	25 T21S R31E
Stagg Dome	1934		C3		D	03 T13S R30E
Sunday Peak	1933P		4AR?		D	06 T25S R32E
The Needles (Lloyd)	1937	SPD9'	C3		S/S	14 T21S R32E
Tobias Peak	1936		C3		S	07 T24S R32E

SHASTA NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Bear Mountain	See CDF					
Billys Peak	1934	H-B20'	C3		R/D	26 T38N R8W
Black Butte	1963	BLK	C16		D/R	30 T41N R4W
Black Fox Mountain	1939	BETT30'	C3		S/S	06 T40N R1E
Bolivar-Craggy	See Klamath USFS					
Bonanza King	1934		C3	AWS	S/S	12 T37N R7W
Brock Mountain	1932	TT16'	R1		D/D	18 T34N R2W
Bunchgrass Mountain	1934	K-B30'	C3		D/D	35 T36N R1E
Craggy Peak	See Klamath USFS					
Damnation Peak	1933P	Tree			UK	23 T36N R6W
Delta Point	1936	TT10'	C3		D/D	23 T36N R5W
Gazelle Mountain	See Klamath USFS					
Girard Ridge	1931	BETT12'	4AR		S/S	25 T38N R4W
Girard Peak	1931P	Platform		UK	D/D	25 T38N R4W
Grey Butte	1927		4AR?		D	04 T40N R3W
Grizzly Peak	1953	BLK5'	CL10		S/S	21 T38N R1W
Hirz Mountain	1940	K-B20'	C3		S/S	07 T35N R3W
Hogback Mountain	1977	BRK9'	C16		S/S	20 T35N R1W
Little Mount Hoffman	1940		C3		S	08 T43N R3E
Little Round Mountain	1933	TT24'	R1		D/D	04 T34N R1W
Mount Bradley	1933	BETT13'	R1		S/S	22 T39N R4W
Mount Eddy	1915?		CU	SPD	D/S	18 T40N R5W
Mount Hoffman?	1931	Relocated to Little Mt. Hoff.?				31 T44N R4E

SHASTA NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Northfork Mountain	1935		C3		D	32 T37N R2W
Oat Mountain	1938	Location and type unknown				
Pilgrim Creek	1930s	Tree (Exp. Forest)			S	08 T40N R1W
Sherer Ridge	1937	TT20'	C3		NB?	T39N R6W
Shirttail Peak	See Trinity USFS					
Sims Ridge (Butte)	1931	TT8'	4AR		D/D	29 T37N R4W
Slate Mountain	1932	BOTT24'	R1		S/S	03 T36N R6W
Soldier Mountain	See CDF					
Sugarloaf Mountain	1931	BETT8'	4AR		S/S	04 T35N R5W
Sugar Pine Peak	1937	TT10'	C3?		NB?	

SIERRA NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Bald Mountain (Baldy)	1935	H-B19'	C3		S/S	35 T9S R25E
Black Mountain	See CDF					
Black Point	UK	Emergency site			NB?	17 T8S R25E
Burro Mountain (Burre)	1940P	TT20'	W10'?		D?	33 T10S R24E
Burrough Mountain	See Burro Mountain					
Castle Peak	See Oat Mountain					
Crystal Peak	Misspelling of Castle					
Crown Valley (G.S.)	1920s?	Guard Station		UK		29 T11S R29E
Cattle Mountain	1938P	Emergency site			NB?	04 T5S R25E
Devils Peak	See Signal Peak					
Fence Meadow (Point)	1934	H-B20'	C3		S/S	19 T11S R26E
Goat Mountain (South)	1934	H-B20'	C3		S/S	34 T7S R22E
Hog Mountain (South)	1940P	TT20'	W10'	UK	NB?	14 T12S R24E
Kaiser Peak	1933P	No other information				25 T7S R25E
Lookout Peak?	1933P	No other information				21 T13S R30E
Long Meadow Ridge	UK	Emergency site?			NB?	T8S R27E
Miami Peak	1934	H-B20'	C3		S/S	11 T6S R20E
Mount Tom	1940	K-B30'	C3		S/S	30 T6S R26E
Mount Raymond	1938P	Emergency site			NB?	10 T5S R22E
Musick Mountain	1939	H-B20'	C3		S/S	01 T9S R24E
Oat Mountain	1930	H-B20'	4AR		R/D	34 T8S R23E
Pilot Peak	1915		UK		D	05 T6S R21E

SIERRA NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Pinchusion	1938P	Emergency site			NB?	26 T5S R26E
Pinoche	1940P		W10'	UK	D	33 T3S R20E
Quartz Mountain	1938P	Emergency site			NB?	03 T5S R23E
Raymond Mountain	1938P	No other information				09 T5S R22E
Shark Tooth	1938P	Emergency site			NB?	28 T5S R27E
Shuteye Peak (Big)	1957	Blk10'	CL10		S/S	02 T7S R23E
Signal Peak	1951	Blk10'	CL10		S/S	01 T5S R20E
Spanish Peak (Mtn)	1938	K-B30'	C3		NB	11 T11S R28E
Sweatwater Point	1933	Emergency site?			NB?	21 T4S R19E
Wawona Point	See Yosemite NPS					
Weldon Point	1916P	No other information			D?	20 T11S R24E

SIX RIVERS NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Ammon Ridge	1934?	Tree?		C2*	?/S	16 T5N R5E
Baldy Peak	No information				D	22 T15N R4E
Bear Basin Butte	1937?	TT20'	C3		D/D	03 T16N R4E
Bee Tree Mountain	See Ammon Ridge					
Big Hill	See BIA					
Blake Mountain	See Trinity USFS					
Blue Creek Mountain	UK/41?	Tree		AWS	S/D	30 T12N R4E
Board Camp Mountain	1934	H-B20'	C3		D/D	27 T4N R4E
Branen Mountain	UK/31	Tree/UK			UK/D	23 T7N R4E
Brush Mountain	1934	K-B30'	C3		S/S	12 T6N R4E
Buck Mountain	1969	SPD12'	SPD	TRL	R/R/R	05 T14N R3E
Camp-6 Mountain	1935?	NOTT30'	B42		S/S	31 T17N R3E
Cold Springs	1934	BOTT12'	C3		D/D	20 T2N R6E
Eightmile Peak	1961	K-B11'	C16		S/S	25 T2N R5E
Four Brothers	See Ship Mountain					
Goat Hill	See Lassics					
Grizzly Mountain	1934P	AM30'	M7'	SPD	R/R/D	34 T2S R6E
Grouse Mountain	34/77?	K-B30'	C14R		S/S	01 T4N R4E
Haman Ridge (Duncan)	1933P			SPD	D	03 T5S R7E
Hayden Roughs	1933P	No other information			D	07 T26N R12W
Hettenshaw	1932		Tent		D	28 T2S R7E
High Dome	No information				D	20 T18N R3E
High Plateau	see Long Ridge					

SIX RIVERS NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Horse Ridge	1933	BOTT21'	R1		S/S	19 T28N R12W
Iaqua Buttes	See CDF					
Kettenpom Peak	1936	BOTT17'	C3		S/S	02 T4S R6E
Lassics Peak (Mount)	1935			C2	D	07 T2S R6E
Lems Ridge	See Buck's Mountain					
Little Rattlesnake Mtn	See Rattlesnake Mountain					
Long Ridge	1930s?	BOTT10'	R610'		S/D	27 T18N R2E
Mad River Rock	1936		C3		D	15 T1S R6E
Monkey Ridge	No information				D	02 T18N R3E
Orleans Mountain	1933	NETT11'	R1		S/S	11 T10N R6E
Rattlesnake Mountain	No information				D	17 T15N R2E
Red Mountain	See CDF					
Salmon Mountain	No information				D	08 T9N R7E
Sanger Peak	1958		R6		D	29 T18N R5E
Shannon Butte	No information				D	34 T3S R7E
Shelton Butte	1934	TT10'	C3		D/D	20 T10N R5E
Ship Mountain	1930?	TT	4AR		D/D	35 T16N R3E
Ship Mountain	1960s		TLR	R1M*	S/S	02 T15N R3E
Stone Corral	No information				D	26 T18N R1E
Summit (Valley)	UK	Tree				22 T14N R3E
Trinity Summit	1920s?			SPD	D?	14 T8N R6E
Upper Coon Mountain	1935P	No other information			D	32 T17N R3E
Youngs Peak	No information				D	04 T17N R5E

STANISLAUS NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
American Camp	1930	AM60'	M7'	C1?	S/S/D	25 T3N R14E
Armstrong Hill	See Eldorado USFS					
Aspen Valley Ridge	See Yosemite NPS					
Blue Mountain	1934	BlkB'	C3		D/D	30 T6N R15E
Camp Crandall Hill	See Crandall Peak					
Crandall Peak	1934	BETT17'	C3		S/S	31 T4N R17E
Darby Knob	1933P	Tree			UK	25 T4N R14E
Devils Nose	33P/NB	Platform		C2?	D/NB	15 T7N R14E
Duckwall Mountain	35/51	AM100'	M7'	SPD	S/S/S	04 T1N R17E
Early Intake	See Jones Point					
Folsom	1934	TT30'	C3		D/D	20 T7N R15E
Forebay	1940P	TT20'	C3		D/D	06 T3N R15E
Jones Point	1936		C3		D	10 T1S R18E
Leeks Springs Hill	See Eldorado USFS					
Liberty Hill	1926?	RTT?	UK		D/D	15 T6N R17E
Manzanita Point	1940s?	No other information			NB	01 T4N R14E
McCormick	1934	TT10'	C3		D/D	24 T4N R15E
Mount Elizabeth (Peak)	1961	K-B55'	C16		S/S	32 T3N R16E
Mount Reba	1967			R1M	R	32 T8N R18E
North Mountain	1964	K-B55'	C16		S/S	33 T1N R19E
Pilot Peak	1963	K-B20'	C16		S/S	13 T2S R18E
Pinecrest Peak	1934		C3		D	06 T4N R19E
Slash Disposal	1927P	UK	UK		D/D	01 T4N R17E

STANISLAUS NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Smith Peak	1952	K-B20'	C14		S/S	34 T1S R17E
Sugarloaf Mountain	1934	BETT17'	C3		D/D	31 T1N R17E
Thompson Peak (Meadow)	1936	BETT20'	C3		D/D	26 T2N R17E
Trumbull Peak	1934	AM45'	M7'	C2	S/S/S	09 T3S R19E
Wet Meadow Hill	1933P	No other information			D	24 T1N R16E
Woods Ridge	1939	AM100'	M7'	C2*	S/S/S	11 T1N R18E

TAHOE NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Alaska Peak	1934	BETT16'	C3		D/D	06 T18N R9E
Babbitt Peak	1937?	NETT7'	C3		S/S	08 T20N R17E
Bald Mountain (Duncan)	1937	NETT5'	C3		S	15 T15N R13E
Banner Mountain	20/35	AM60'	M7'	C1?	S/S	16 T16N R9E
Bear River Lookout	1933P	No other information				
Big Valley Bluff	1936	TT18'	C3		D/D	25 T16N R12E
Calpine Hill	1934	BETT17'	C3		S/S	18 T21N R14E
Camels Hump	1939?	TT8'	C3		D/D	28 T16N R10E
Cherry Hill	1933	TT16'	C3		D/D	24 T18N R10E
Chipmunk Ridge	1930s	Emergency shelter			NB	
Crystal Peak	1933P	No other information			D	28 T20N R17E
Columbia Hill	1936	TT16'	C3		D/D	28 T18N R9E
Dog Valley Point	1937P		W8'		D?	25 T20N R17E
Donner Peak	See Southern Pacific Railroad					
Duncan Peak	1941P	TT	C3?		R	10 T15N R13E
Granite Peak	1933P	No other information			D	24 T19N R17E
Grouse Ridge	1923?		4AR		S	34 T18N R12E
Hess Lookout	1933P	No other information				
Helester Point	1938	K-B20'	C3		S/D	36 T16N R11E
Junction House	1930s	Guard Station				
Little Bald Mountain	See Bald Mountain					
Martis Peak (Point)	1918		4A*		S	25 T17N R17E
McClellen Peak	1935		C3		D	Nevada

TAHOE NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Mosquito Ridge	1935	AM60'	M7'	C2	D/D/D	25 T14N R11E
Red Mountain	See Southern Pacific Railroad					
Rocky Point (Bald Top)	1930s	Emergency shelter			NB	22 T20N R9E
Saddleback Mountain	1934	BETT7'	C3		S/S	33 T21N R10E
Sardine Peak	1935	BETT17'	C3		S/S	34 T20N R16E
Sierra Buttes	1963	Blk12'	C16		S/S	17 T20N R12E
Signal Peak	See Red Mountain					
Stateline Point	See Lake Tahoe Basin M.U.					
Verdi Peak	1983		KEV	TLR	S/S	25 T19N R17E
Zephyr Point	See Lake Tahoe Basin M.U.					

TRINITY NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Backbone Ridge	1935			C2	D	17 T35N R11W
Beegum Peak	See CDF					
Bennett Peak	See Lake Mountain					
Black Rock	1935	BOTT21'	C3		S/S	08 T27N R10W
Blake Mountain	UK/38	Tree/UK	UK	SPD	D/D/D	25 T3N R5E
Blue Mountain	No information				NB?	12 T35N R7W
Bowerman Ridge	1956	NOTT40'	C14		D/D	26 T35N R8W
Buckeye Ridge	1939	TT20'	C3		NB	T34N R8W
Cabin Peak	1935		C3		D	03 T36N R12W
Canyon Creek	1934			C2	D	36 T35N R11W
Coffey Pot	1940P	LOF		SPD	NB?	27 T2S R6E
Cold Springs	1934	BOTT14'	C3		D/D	21 T2N R6E
Dedrick Point	See Canyon Creek					
Deerlick (Springs)	1933			C2	R	19 T30N R9W
Dubakella	See Dubit Kelly					
Dubit Kelly	1940P		C3		D	07 T29N R11W
Eagle Rock	1935		C3		D	06 T4N R8E
Goat Camp (Lassics)	See Six Rivers USFS					
Granite Peak	1916		GDN?		D	10 T35N R9W
Greasewood Hill	1934			C2	D	26 T27N R8W
Grizzly Mountain	1934P	AM30'	M7'	UK	R/R/D	34 T2S R6E
Hayfork Bally	1965	K-B42'	C16		S/S	03 T32N R12W
Hettenshaw Peak	See Six Rivers USFS					

TRINITY NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Ironside Mountain	1940		C3		S	01 T5N R6E
Knob Peak	1934	BETT13'	C3		S/S	02 T29N R10W
Lake Mountain	1937	H-B20'	C3		NB	36 T4N R5E
Lamb Gap?	No information				D	25 T1N R6E
Limedyke Mountain	1937	K-B30'	C3		S/S	29 T2N R7E
Mary Blaine Mountain	1925?		4AR		D	07 T37N R12W
Mears	Possibly near Buckeye Ridge				NB?	
Packers Peak	1920s?		4AR?		D	02 T37N R10W
Packers Peak (G.S.)	1920s?			Log	S	35 T38N R10W
Pattymocus Butte	See CDF					
Pettyjohn Mountain	1939P	Tree		UK	Snag	19 T34N R8W
Pickett Peak	1965	K-B55'	C16		S/S	26 T1S R7E
Platina Point?	No information				D	14 T29N R9W
Plummer Peak	1937	H-B20'	C3		S/S	34 T31N R12W
Post Creek	1934			C2	S	31 T28N R9W
Red Mountain	1934	AM30'	M7'	SPD	D/D/D	32 T29N R11W
Shasta Bally	No information				NB?	27 T32N R7W
Shell Mountain	No information				NB?	11 T26N R11W
Shirttail Peak	1936		C3		D	06 T33N R6W
Tedoc Point (Mtn)	1920s?	No other information			D	29 T28N R9W
Thompson Peak	No information					05 T36N R10W
Tomhead Mountain	1939	H-B20'	C3		S/S	06 T26N R8W
Trinity Mountain	1940P	No other information				04 T34N R7W

TRINITY NATIONAL FOREST

Trinity Summit	1932			SPD	D	14	T8N	R6E
Virgin Creek Point	1934		C3		D	23	T8N	R7E
Weaver Bally	1935	BOTT16'	C3		S/S	16	T34N	R10W
Windy Nip?	No information				D	03	T1N	R6E
Yolla Bolly	1933	Guard Station		C2	D	22	T27N	R10W

TOIYABE NATIONAL FOREST

Site	Const.	Tower	Cab	House	Status	Legal
Angora Ridge	See Lake Tahoe Basin M.U.					
Leviathan Peak	84/35?	BLK10'	R4		S/S	30 T10N R22E
Markleeville Peak	UK	(AKA Leviathan?)				T10N R21E
McClellen Peak	1935		C3		D	T16N R20E
Peavine Mountain	UK	TT	UK		D?	T20N R20E
Slide Mountain	UK	No other information			D	30 T17N R19E
Zephyr Point	See Lake Tahoe Basin M.U.					

KINGS CANYON NATIONAL PARK

Site	Const.	Tower	Cab	House	Status	Legal
Mitchell Peak	UK	K-B30'?	C3?		R/R	04 T14S R30E
Lookout Peak?	No information				NB?	21 T13S R30E
Park Ridge	1964	K-B20'	C16		S/S	04 T14S R30E
Stagg Dome	1934		C3		D	03 T13S R30E

SEQUOIA NATIONAL PARK

Site	Const.	Tower	Cab	House	Status	Legal
Ash Peak (Ridge)	1935?	UK	UK		D/D	21 T16S R29E
Cahoon Rock	1935?	UK	C3		D/D	11 T18S R30E
Homer Peak	1934	Site not improved				
Little Baldy	No information				D	14 T15S R29E
Lookout Point	1930s	Ranger Station		SPD	S	19 T17S R30E
Milk Ranch (North) Pk	1964	K-B20'	C16		S/S	01 T17S R29E
Moro Rock	1930s		C3		NB	07 T16S R30E
Paradise Peak	1931?	ROCK	4AR		D/D	03 T17S R30E

LASSEN NATIONAL PARK

Site	Const.	Tower	Cab	House	Status	Legal
Brokeoff Mountain	1924		4A?		D	20 T30N R4E
Lassen Peak	1912		GDN		D	34 T31N R4E
Mount Harkness	1931	ROCK15'	4A		S/S	27 T30N R6E
Mount Lassen	See Lassen Peak					
Prospect Peak (East)	1917?		4A		R	06 T31N R6E

LAVA BEDS NATIONAL MONUMENT

Site	Const.	Tower	Cab	House	Status	Legal
Hippo Butte	1934	UK	C3		NB	29 T45N R4E
Schonchin Butte	1940	ROCK7'	RAPS		S/S	17 T45 NR4E

PINNACLES NATIONAL MONUMENT

Site	Const.	Tower	Cab	House	Status	Legal
North Chalone Peak	See CDF					

REDWOOD NATIONAL PARK

Site	Const.	Tower	Cab	House	Status	Legal
Bald Mountain	Site not improved					

YOSEMITE NATIONAL PARK

Site	Const.	Tower	Cab	House	Status	Legal
Aspen Valley (Ridge)	1933P		W12'		D	33 T1S R20E
Bald Mountain	1930s	Site not improved				17 T1S R20E
Crane Flat	1931	RAPS13'	4AR		S/S	13 T2S R19E
Henness Ridge	1934	RAPS20'	C3R		S/S	25 T3S R20E
Merced Grove	See Crane Flat					
McGill Meadows	1930	Point near Guard Station			NB	T1N R19E
Miguel Meadows	See McGill Meadows					
North Mountain	See Stanislaus USFS					
Oak Flat	See Crane Flat					
Pinoche Peak	See Sierra USFS					
Signal Peak	See Sierra USFS					
Smith Peak	1930s	Site not improved				24 T1N R20E
South Fork (Point)	1930	Site not improved				06 T2S R20E
Trumbull Peak	See Stanislaus USFS					
Wawona Point	1930	Site not improved				06 T5S R22E
Woods Ridge	See Stanislaus USFS					

BUREAU OF INDIAN AFFAIRS

Hoopa Valley Indian Reservation:

Site	Const.	Tower	Cab	House	Status	Legal
Big Hill	1930s		CU	SPD*	S/S	05 T8N R5E
Sugar Pine Mountain	1930s	No other information			D/D	32 T8N R4E

Los Coyotes Indian Reservation:

Site	Const.	Tower	Cab	House	Status	Legal
Hot Springs Mountain	1928	NOTT21'	4AR		S/S	17 T10S R4E

(Hot Springs Mountain: Built by Cleveland USFS)

BUREAU OF LAND MANAGEMENT

Susanville District:

Site	Const.	Tower	Cab	House	Status	Legal
Observation Peak	1960s	4'	M8'	TLR	S/S/S	28 T34N R16E
Seven Lakes	1960			W9'	S	30 T24N R18E
Seven Sisters	See Seven Lakes					
Yellow Peak [Nevada]	1960s?		WS10'		S	09 T45N R21E

Bakersfield District:

Site	Const.	Tower	Cab	House	Status	Legal
Caliente Mountain	1941?		CU	AWS	S/S	16 T45N R21E

FEDERAL FISH AND WILDLIFE SERVICE

Sacramento National Wildlife Refuge:

Site	Const.	Tower	Cab	House	Status	Legal
I-5 Lookout	1938?	AM100'	M7'		S/S	Near Willows

DEPARTMENT OF DEFENSE

Beale Airforce Base:

Site	Const.	Tower	Cab	House	Status	Legal
Walsh Mountain	1951	BOTT20'	W8'		D/D	09 T15N R6E

CALIFORNIA DEPARTMENT OF FORESTRY

Coast Region (North)

Colusa County

Site	Const.	Tower	Cab	House	Status	Legal
Three Sisters	1931	UK	UK		D?	29 T15N R4W

Del Norte County

Site	Const.	Tower	Cab	House	Status	Legal
Bald Mountain	See Redwoods NPS					
Red Mountain	1961	809R30'	OCT		S/S	14 T13N R2E

Humbolt County

Site	Const.	Tower	Cab	House	Status	Legal
Dyerville	See Iaqua Butte					
Grasshopper Peak	1958	809R30'	OCT		S/S	08 T2S R2E
Iaqua Butte	36/76	BETT9'	PLA		S/S	06 T3N R3E
Monument Peak	See Mount Pierce					
Mount Pierce	1944		CU	AWS	R/D	HB&M Point
North Central	See Schoolhouse Peak					
Pierce Mountain	See Mount Pierce					
Pratt (Mountain)	1934	AM49'	M7'	C2	S/S/S	14 T4S R4E
Schoolhouse Peak	39/76	BETT30'	PLA		S/S	19 T9N R3E

Lake County

Site	Const.	Tower	Cab	House	Status	Legal
Mount Konocti	1978	BOX-B45'	PLA		S/S	17 T13N R8W

CALIFORNIA DEPARTMENT OF FORESTRY

Coast Region (North)

Mendocino County

Site	Const.	Tower	Cab	House	Status	Legal
Cahto Peak	34/67	NETT20'	OCT		S/S	07 T21N R15W
Cold Springs Mountain	1969	809R30'	OCT		S/S	33 T14N R15W
Gualala	1938	AM60'	M7'	C1	D/D/D	36 T12N R15W
Iron Peak	1953	809?,20'	OCT		S/S	25 T23N R15W
Mathison Peak	1934	BETT30'	C3		D/D	06 T16N R16W
Sherwood Peak	1933P	Emergency shelter			NB	10 T19N R15W
Two Rock	37/66	BETT30'	OCT		S/S	05 T17N R14W

Napa County

Site	Const.	Tower	Cab	House	Status	Legal
Atlas Peak	1936P	ETT8'	C3		NB	14 T7N R4W
Berryessa Peak	1947	809,30'	OCT		S/S	04 T9N R3W
East Napa (Pole)	1930s?	TT20'	C3		D/D	
Mount George	1938	BETT20'?	C3		NB?	29 T6N R3W
Signal Mountain (Hill)	No information				NB?	09 T6N R3W

Sonoma County

Site	Const.	Tower	Cab	House	Status	Legal
Big Mountain	1935?	BETT20'	C3		R/R	12 T10N R12W
Mount Jackson	1947	809,20'	OCT		S/S	15 T8N R10W
Mount Saint Helena	1962	809R30'	OCT		S/S	33 T10N R7W

CALIFORNIA DEPARTMENT OF FORESTRY

Coast Region (North)

Sonoma County

Site	Const.	Tower	Cab	House	Status	Legal
Oak Ridge	58/43	AM83'	M7'	SPD	S/S/S	03 T10N R13W
Pole Mountain	See Pole Mountain Lookout Association					
Red Oat Mountain	1968	NEWF7'	W8'		R/R	05 T8N R11W
Ross Mountain	See Pole Mountain Lookout Association					
Russian River Point	1936P	BETT30'	C3?		NB?	

Coast Region (South)

Alameda County

Site	Const.	Tower	Cab	House	Status	Legal
Altamont	AWS			TLR	R	
Crane Ridge	AWS	NEWF11'	SPD		D/D	

Contra Costa County

Site	Const.	Tower	Cab	House	Status	Legal
Grizzly Peak	1929P	AM40'	M7'	UK	D/D/D	
Mount Diablo	1937?	Summit Building (SPD)			S	01 MDB&M
Round Top	1927	AM60'	M7'	UK	D/D/D	

Merced County

Site	Const.	Tower	Cab	House	Status	Legal
Basalt Peak	1947	809,20'	OCT		S/S	34 T10S R8E

CALIFORNIA DEPARTMENT OF FORESTRY

Coast Region (South)

Monterey County

Site	Const.	Tower	Cab	House	Status	Legal
Calandra	1944	BETT30'	C3		S/S	04 T23S R9E
Chalone Peak	1952	B09,20'	OCT		S/S	15 T17S R7E
Fremont Peak	1931	Stone	4AR		NB?	35 T13S R4E
Pinyon Peak	See Sid Ormsbee					
Sid Ormsbee	1948	B09,30'	OCT		S/S	31 T16S R2E
Smith Mountain	1976	BLK10'	C16		S/S	29 T21S R13E
Toro Peak	1936P	UK	UK		NB?	23 T16S R3E
Williams Hill	See Calandra					

San Benito County

Site	Const.	Tower	Cab	House	Status	Legal
Call Mountain	1935	BETT30'	C3		S/S	23 T15S R8E
Hepsedam Peak	1937	TT20'	C3		NB?	31 T18S R11E
Sampson Peak	1940?	TT20'	C3		NB	31 T17S R12E

San Mateo County

Site	Const.	Tower	Cab	House	Status	Legal
Allen Peak	1966	BOX-B52'	M15'		S/S	27 T6S R4W
Mindego Hill	1936?	Stone	C3		NB?	19 T7S R3W
Pise Peak (Hill)	1940s			AWS?	D	30 T5S R4W

CALIFORNIA DEPARTMENT OF FORESTRY

Coast Region (South)

Santa Clara County

Site	Const.	Tower	Cab	House	Status	Legal
Copernicus Peak	1938	K-B14'	C3		S/S	10 T7S R3E
El Soreno	1937P	TT20'	C3		D?	13 T8S R2W
Loma Prieta	1934	BETT30'	C3		D/D	34 T9S R1E
Mount Boardman	1945P	No other information				
Mount Hamilton	See Copernicus					
Pacheco Peak	1935	BETT30'	C3		S/S	02 T11S R6E

Santa Cruz County

Site	Const.	Tower	Cab	House	Status	Legal
Chalks Mountain	1937	BETT20'	C3		D/D	10 T9S R4W
Eagle Rock	1938	BETT20'	C3		S/S	16 T9S R3W
Mount Bielawski	22/69	AM60'	M7'	SPD	S/S/S	20 T8S R2W

Stanislaus County

Site	Const.	Tower	Cab	House	Status	Legal
Mike's Peak	1936P	No other information			D	04 T7S R6E
Mount Oso	48/UK	AM30'	M7'	TLR	S/S/S	12 T5S R5E

CALIFORNIA DEPARTMENT OF FORESTRY

Sierra-Cascade Region

Butte County

Site	Const.	Tower	Cab	House	Status	Legal
Bald Mountain	34/73	K-B30'	PLA		S/S	12 T24N R4E
Bloomer Hill	34/73	AM58'	M7'	SPD	S/S/S	30 T21N R5E
Lone Pine (Point)	1930s	AM40'	M7'	UK	R/R/D	07 T23N R3E
Lookout Mountain	1939?	Emergency shelter				
Platte Mountain (Hill)	56/53	AM92'	M7'	C2*	S/S/S	16 T24N R3E
Rackerby	1930s	TT20'	No other information			
Sawmill Mountain	30/69	K,X-B20'	PLA		S/S	32 T23N R4E
Sunset Hill	34/70	K-B30'	PLA		S/S	09 T19N R6E

Lassen County

Site	Const.	Tower	Cab	House	Status	Legal
Don Landon	1974	NEWF10'	PLA		S/S	35 T31N R11E
Fredonyer Peak	1973	NEWF10'	PLA		S/S	26 T33N R12E
Greens Peak	See Don Landon					
Hayden Hill	See Modoc USFS					
Likely Mountain	1967	SPD39'	SPD8'	TLR	S/S/S	02 T38N R12E
Observation Peak	See BLM					
Pegleg Mountain	1984	NEWF10'	PLA		S/S	03 T29N R9E
Shaffer Mountain	39/33P	TT20'	4AR?		NB?/D	24 T30N R14E

CALIFORNIA DEPARTMENT OF FORESTRY

Sierra-Cascade Region

Modoc County

Site	Const.	Tower	Cab	House	Status	Legal
Manzanita Mountain	1973?	NEWF10'	PLA		S/S	26 T40N R10E

Nevada County

Site	Const.	Tower	Cab	House	Status	Legal
Banner Mountain	30/63	AM60'	M7'	SPD	S/S/S	16 T16N R9E
Wolf Creek Mountain	1983	ABT20'	PLAR		S/S	21 T15N R8E

Placer County

Site	Const.	Tower	Cab	House	Status	Legal
Howell Mountain	31/35	AM60'	M7'	SPD	S/S/S	16 T14N R9E
Iowa Hill	1930s	Emergency shelter			D	33 T15N R10E

Shasta County

Site	Const.	Tower	Cab	House	Status	Legal
Alamine	UK	Emergency site			NB?	32 T32N R1E
Latour Butte	34/74	NETT19'	PLA		S/S	23 T32N R2E
Shasta-Bear Mountain	1980	ABT29'	PLAR		S/S	07 T33N R3W
Soldier Mountain	1974	NEWF9'	PLA		S/S	01 T37N R3E
South Fork Mountain	1982	ABT28'	PLAR		S/S	03 T32N R6W

Siskiyou County

Site	Const.	Tower	Cab	House	Status	Legal
Duzel Rock	1978	NEWF10'	PLA		S/S	36 T43N R8W

CALIFORNIA DEPARTMENT OF FORESTRY

Sierra-Cascade Region

Siskiyou County

Site	Const.	Tower	Cab	House	Status	Legal
Paradise Craggy	1969		PLA		S	28 T46N R6W
Quartz Hill	1977	B09R?30'	PLA		S/S	07 T43N R9W
Siskiyou-Bear Mountain	1975	NEWF12'	PLA		S/S	15 T40N R2E

Tehama County

Site	Const.	Tower	Cab	House	Status	Legal
Beegum Peak	1930s		C3		D	33 T29N R9W
Campbellville	1937P	TT60'	W8'?	C2	D/D/D	14 T25N R2E
Digger Butte	1936	H-B20'	C3		S/S	29 T30N R2E
Eagle Peak	1967	K-B20'	C16		S/S	22 T24N R7W
Inskip Hill	34/75?	K-B30'	PLA		S/S	26 T29N R1W
Montgomery Peak	1936	TT20'	C3		D/D	09 T26N R5W
Montgomery Peak	1936	BETT30'	C3		D/D	T26N R5W
Pattymocus Butte	1970	K-B6'	PLA		S/S	10 T28N R9W
Paynes Creek	See Inskip Hill					
Promontory Point	1930s	Emergency	site		NB?	34 T25N R2E
Sutton	1936P	TT35'	C3?		D	
Tuscan Butte	1967	BRK9'	SPD		S/S	21 T28N R2W
Vina	1962		CU	SPD	S/S	18 T24N R1W

CALIFORNIA DEPARTMENT OF FORESTRY

Sierra-Cascade Region

Trinity County

Site	Const.	Tower	Cab	House	Status	Legal
Bully Choop (Mountain)	1978	SPD10'	PLA		S/S	09 T31N R8W

Yuba County

Site	Const.	Tower	Cab	House	Status	Legal
Oregon Peak	1935	AM59'	M7'	C1?	S/S/S	27 T18N R7E
Walsh	See Department of Defense					

CALIFORNIA DEPARTMENT OF FORESTRY

Central Region

Amador County

Site	Const.	Tower	Cab	House	Status	Legal
Mount Zion	30/34	AM60'	M7'	C2*	S/S/S	09 T6N R12E

Calaveras County

Site	Const.	Tower	Cab	House	Status	Legal
Bear Mountain	See Fowler Peak					
Blue Mountain	1966	809R?11'	OCT		S/S	30 T6N R15E
Golden Gate Hill	1936				NB	34 T5N R11E
Fowler Peak	1938	NETT20'	C3		S/S	18 T2N R13E
Quiggs Mountain	See Sierra Vista					
Sierra Vista	31/35	AM60'	M7'	C1?*	S/S/S	02 T4N R12E
Valley Springs	1971	809R22'	OCT		S/S	13 T4N R10E

El Dorado County

Site	Const.	Tower	Cab	House	Status	Legal
Gold Hill	1930s	TT20'	C3?		D/D	
Mount Danaher	1952	AM100'	M7'		S/S	05 T10N R12E
Pilot Peak	1950	809R20'	OCT		S/S	12 T11N R8E
Pine Hill	1937	BETT15'*	C3*		S/S	16 T10N R9E
Round Mountain	1937P	TT35'	UK		NB?	14 T8N R12E

CALIFORNIA DEPARTMENT OF FORESTRY

Central Region

Fresno County

Site	Const.	Tower	Cab	House	Status	Legal
Bare Hill	See Bear Valley Mountain					
Bear (Valley) Mountain	27/38	AM60'	M7'	C2	S/S/S	05 T14S R25E
Black Mountain	34/50	K-B30'	C3*		S/S	34 T10S R23E
Castle Mountain	1936				NB?	10 T23S R15E
Copper Peak	1936	NETT10'	C3		D/D	35 T11S R21E
Joaquin Murietta	1936/48					27 T18S R13E
Owens Mountain	See Copper Peak					
Wright Mountain	See Joaquin					

Kings County

Site	Const.	Tower	Cab	House	Status	Legal
Cottonwood	1953		SPD	SPD	S/S	07 T24S R18E

Madera County

Site	Const.	Tower	Cab	House	Status	Legal
Deadwood Peak	34/52	H-B20'	C3*		S/S	21 T7S R21E
Red Top	1934	BETT20'	C3		S/S	22 T9S R20E

Mariposa County

Site	Const.	Tower	Cab	House	Status	Legal
Cathay	1936P	TT30'	C3		NB	26 T5S R17E
Green Mountain	1943		CU	AWS	S/S	03 T8S R18E

CALIFORNIA DEPARTMENT OF FORESTRY

Central Region

Mariposa County

Site	Const.	Tower	Cab	House	Status	Legal
Guadalupe	1938P	Platform			D	36 T5S R17E
Penon Blanco	1938	BETT30'	C3		S/S	25 T2S R15E
Williams Peak	1936P	NETT11'	C3		S/S	11 T4S R16E

Tulare County

Site	Const.	Tower	Cab	House	Status	Legal
Blue Ridge	31/35	AM60'	M7'	C1?	S/S/S	09 T19S R29E
Eshom Peak (Point)	1935P	No other information				09 T15S R28E
Shadequarter Mountain	1965	809R30'	OCT		S/S	05 T16S R28E

Tuolumne County

Site	Const.	Tower	Cab	House	Status	Legal
Big Hill	See Rushing Mountain					
Hog Mountain	1937P		C3		NB	05 T1S R15E
Rushing Mountain	31/34	AM33'	M7'	C2*	S/S/S	20 T1S R13E

CALIFORNIA DEPARTMENT OF FORESTRY

Southern Region

Riverside County

Site	Const.	Tower	Cab	House	Status	Legal
Anza	1937P	Emergency site				
Box Springs	1940s?	No other information				27 T2S R4W
Estelle Mountain	1936	K-B30'	C3		R/D	05 T5S R5W

San Bernardino County

Site	Const.	Tower	Cab	House	Status	Legal
Little Mountain	1937	H-B20'	C3		D/D	20 T1N R4W
Manker (Red Hill)	See San Bernardino USFS					
Summit (Cajon Summit)	1938	H-B20'	C3?	SPD	NB/D	18 T3N R5W

San Diego County

Site	Const.	Tower	Cab	House	Status	Legal
Bottle Peak	1937	TT20'	C3		D/D	05 T12S R1W
Boucher Hill	1948	809,30'	OCT		S/S	06 T10S R1E
Cuyamaca Peak	See Cleveland USFS					
Mount Woodson	50/36	809,30'	OCT	C2	S/S/D	27 T13S R1W
Red Mountain	1973?	NEWF10'	PLA		S/S	15 T9S R3W
Tecate Peak	1937	BETT20'	C3		D/D	28 T18S R3E

San Luis Obispo County

Site	Const.	Tower	Cab	House	Status	Legal
Rocky Butte	38/76	BETT20'	C16		S/S	13 T26S R8E

CALIFORNIA DEPARTMENT OF PARKS & RECREATION

Mount Diablo State Park:

Site	Const.	Tower	Cab	House	Status	Legal
Mount Diablo	1938?	Summit Building			S	01 MDB&M

KERN COUNTY

Site	Const.	Tower	Cab	House	Status	Legal
Annette	1939?	NETT22'	C3		S/S	20 T26S R17E
Bear Mountain	1939		C3		NB?	
Blue Mountain	1939	BETT20'	C3		D/D	16 T25S R30E
Caliente Mountain	See BLM					
Cook Peak	See Sequoia USFS					
Cummings Mountain	1940	BETT30'	C3		NB?	
McKittrick Summit	1945P	No other information			D	30 T30S R21E
Midway	1945P	No other information			D	04 T32S R22E
North Kern	See Blue Mountain					
Tembler Peak	See Annette					
Tollgate	1940?	BETT20'	W12'		S/S	
Toll House	See Tollgate					

LOS ANGELES COUNTY

Site	Const.	Tower	Cab	House	Status	Legal
Blue Ridge	See Angeles USFS					
Bodel	1934P	No other information			D	02 T1S R19W
Bunker Hill	See City of Los Angeles					
Buzzard Peak	1934	No other information			NB	29 T1S R9W
Castro Peak	1924	NOX-B	M8'	UK	D/R/D	17 T1S R18W
Charlie Peak	1950s			TLR?	R	18 T5N R16W
Dume Peak	1937	K-B30'	C3		NB	07 T2S R18W
Flintridge Water Tower	1937P				NB	
Mount Gleason	1927	NOX-B60'	M8'	ROCK	D/D/S	06 T3N R12W
Mount Hollywood	See City of Los Angeles					
Mount Islip	1927	NOX-B22'	M8'	ROCK	D/D/S	17 T3N R9W
Mount Wilson	See Angeles USFS					
Oak Mountain	1940P	(Misspelling of Oat?)				
Oat Mountain	1928P	30'	UK		D?	19 T3N R16W
Pacoima	1935P	No other information				04 T2N R15W
Parker Mountain	1938?	NETT20'	C3		D/D	02 T4N R13W
Point Dume	See Dume Peak					
San Rafael	1934?	K-B30'	C3*		S/S	14 T1N R13W
San Dimas	See Angeles USFS					
Sandstone Peak	1937P	UK	UK		NB	36 T1N R20W
San Jose	1924	S40'	4A?		D/D	11 T1S R9W
Sawmill Peak	1929	No other information			D	29 T7N R15W
Sunset Peak	1927?	K,X-B20'	C3		D/D	35 T2N R8W

LOS ANGELES COUNTY

Site	Const.	Tower	Cab	House	Status	Legal
Tejon	No information					08 T8N R18W
Temescal	See City of Los Angeles					
Temple	1937	AM60'	M7'	UK	D?	12 T1S R11W
Topango (Saddle Pk)	1938?	K-B30'	C3		D/D	11 T1S R17W
Triunfo Peak	1934P	No other information				06 T1S R19W
Verdugo Peak	1934	NOX-B60'	M8'	SPD	D/D/D	31 T2N R13W
West Verdugo Peak	1938	K-B30'	C3		D/D	23 T2N R14W

MARIN COUNTY

Site	Const.	Tower	Cab	House	Status	Legal
Dixon	See Mount Barnabe					
Gardner	See Mount Tamalpias					
Mount Barnabe	1974	BLK19'	SPD16'		S/S	15 T2N R8W
Mount Tamalpias	1935	ROCK10'	C3*		S/S	13 T1N R7W
Point Reyes Hill	AWS only?				NB?	29 T3N R9W

ORANGE COUNTY

Site	Const.	Tower	Cab	House	Status	Legal
Bolero	1935?	NETT10'	C3		S/S	30 T5S R7W
Cerro Peak	1936P	No other information				
Gilman Peak	1938	K-B30'	C3		D/D	12 T3S R9W
Sierra Peak	See Cleveland USFS					

SANTA BARBARA COUNTY

Site	Const.	Tower	Cab	House	Status	Legal
Solomon Mountain	1937P	TT	C3		D/D	23 T9N R33W
Stanley Mountain	No information					

VENTURA COUNTY

Site	Const.	Tower	Cab	House	Status	Legal
South Mountain	1934	BRK12'	SPD		S/S	19 T3N R20W
Triunfo Peak	See Los Angeles County					

CITY OF LOS ANGELES

Site	Const.	Tower	Cab	House	Status	Legal
Bunker Hill?	1933P	AM?40'?	M7'?		D/D	21 T1S R13W
Griffith Peak	See Mount Hollywood					
Mount Hollywood	1933P	No other information			D	36 T1N R14W
San Vicente Mountain	1935P	No other information			D	35 T1N R16W
Temescal	1935P	No other information			D	10 T1S R16W

Southern Pacific Railroad Company

Site	Const.	Tower	Cab	House	Status	Legal
Donner Peak?	1800s	Site not improved				22 T17N R15E
Red Mountain	1909			ROCK	S	17 T17N R13E
Signal Peak	See Red Mountain					

Pole Mountain Lookout Association

Site	Const.	Tower	Cab	House	Status	Legal
Pole Mountain	1981	NEWF7'	W8'		S/S	30 T8N R11W

Fixed Point Fire Detection: The Lookouts

Inquiries regarding this research may be directed to:

Mark V. Thornton

P. O. Box 192

Groveland, Ca. 95321